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ABSTRACT

The monograph describes more than 200 plants growing within the approximately 300 square miles of the original land of the Kashaya Pomo Indians, which lies along the coast of Sonoma County, California. An introduction provides information on the plant communities represented (redwood forest, mixed evergreen forest, oak woodland, Douglas fir forest, chaparral, coastal scrub, grassland, and coastal strand), Kashaya folk plant taxonomy, and Kashaya cultural traditions relating to the gathering and use of plants. Detailed entries for each plant include common English name, scientific name, family to which the plant belongs, general description of the plant (bark, leaves, flowers, seeds, and roots), habitat, Kashaya name and English translation, food uses, medicinal uses, technological uses, miscellaneous information, and gathering season. To distinguish old, traditional uses of plants from new ones, past and present tenses of verbs are used. Three appendices, following the same format as the main entries, describe mosses, seaweeds, and mushrooms. Other appendices list English and Kashaya names of introduced plants and plant parts, define technical terms, and give a key to Kashaya pronunciation. Five alphabetical indexes list plants by their common English names, scientific (Latin) names, family names, Kashaya plant names, and cultural uses (food, medicinal, technological). (NEC)

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KASHAYA POMO PLANTS

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KASHAYA POMO PLANTS

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In July 1974, Professor Shirley Silver, Department of Anthropology, Sonoma State College, was awarded a grant by the National Endowment for the Humanities (Education Programs #EH-20095-74-381) to conduct a study of Kashaya Pomo language and culture. Our plant study could not have reached its present state without the initial support of the endowment and to them we are grateful for the opportunity afforded us. To the director of this project, Professor Shirley Silver, we are deeply indebted for her time and support as a teacher and friend. It is hard to find words to thank her enough for what she has done, for without her this book would not exist.

To Dr. Robert Oswalt we wish to express appreciation of his unending patience in correcting, at various stages in the course of our work, our spellings of Kashaya plant terms. We are also grateful to him for sharing with us his Kashaya language slip files which contain plant name data he collected during the course of linguistic fieldwork in the late 1950's and in the 1960's. Working principally with Herman James and Essie Parrish, Dr. Oswalt collected almost all of the Kashaya plant names included in our study. He arrived at translations of most of these names by utilizing the combined knowledge of Mr. James and

Mrs. Parrish concerning the common English names of the more prominent trees and shrubs, and by taking Mrs. Parrish, at two different seasons, to the California Native Plants section of the University of California, Berkeley Botanical Garden. In addition, he collected plant specimens which he then had identified by University botanists. In the course of our study, we have added new information to that collected by Oswalt, have re-identified, confirming or revising, the identifications he determined, and have provided scientific identifications of our own.

To Professor Brent Berlin, Department of Anthropology, University of California, Berkeley, we are thankful for his time and energy in teaching us the methodologies of ethno-scientific research, and for his comments and criticism that hopefully have led to the description of a proper Kashaya Pomo plant taxonomy.

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INTRODUCTION

Kashaya language speakers, also called Southwestern Pomo, are members of the Pomoan language family, a group of seven languages that has an areal spread in North-Central California which includes the Clear Lake region, the Russian River drainage, and the adjacent strip of Pacific coast.

The original land of the Kashaya Pomo (see map, Kashaya Territory), whose reservation is located at Stewart's Point, lies along the coast of Sonoma County and covers approximately 300 square miles. The boundaries of the land extended from Duncan's Point just below the Russian River mouth, along the coast north to Black Point just below the mouth of Gualala River, turning inland to the divide which separates the Gualala drainage from the Russian River drainage, and southward along the ridge east of Austin Creek. Although this area has been described by most ethnographers as rugged and inhospitable (by comparison to the land of neighboring inland groups where broad valleys and rolling hills dominate the landscape), an elaborate system of well-worn trails aided accessibility in Kashaya territory to a wealth and variety of resources sought after by other Indian groups as far away as Lake County.

Although Kashaya land lies mainly in the redwood belt, a variety of plant communities are represented: redwood forest, mixed evergreen forest, oak woodland, Douglas fir forest, chaparral, coastal scrub, grassland, and coastal strand.

On north-facing slopes and in damp canyons on the mountainsides, the redwood forest (*šiyo* in the Kashaya language) is dominant. The trees form thick stands that perpetually shade the ground, creating a sometimes impenetrable environment with little vegetation and few resources to offer animal or man. In spots the

forest opens up, allowing light to give life to ferns, salal, thimbleberries and huckleberries, and various herbs.

On upper slopes and high hills where the soil is drier, the vegetation changes into what is called a mixed evergreen forest (*kulu·*), which offers an extremely rich environment, making it a highly desirable area for resources. The dominant trees include tan oak, madrone, Douglas fir, and pepperwood, with chestnut, maple, live oak, black oak, and hazelnut occurring in lesser abundance. Under the trees the growth often becomes thick with berry bushes, manzanita, and other low shrubbery attractive to deer. There are varieties of herbs and plants living on the forest floor also. Frequently the forest floor opens up into grassy meadows which support even more herbs and plants such as "Indian potatoes" (i.e. bulbs and corms) and clovers.

An environment similar to the mixed evergreen forest in usefulness, but less in composition, is the oak woodland (also *kulu·*). On sunny dry south-facing slopes and on ridges away from the redwod and fir communities grow open groves of Oregon oak, tan oak, and black oak, with maple and buckeye along drainages. The woodland floor is mostly grassy with little brush, but again contains many herbs and useful plants. In places the oak woodland community intergrades with the mixed evergreen forest. The oak woodland is much less prominent in Kashaya territory than the mixed evergreen forest but is none-the-less an important source of plant products and an environment attractive to game.

Another forest community, which has become more prominent in the past 100 years due to logging, is the Douglas fir forest. In earlier times the stands of fir were probably much reduced and confined more to the hills inland from the redwood forest. Today they often take the place of or intergrade with former redwood or mixed evergreen forests. A Douglas fir forest is composed mainly of Douglas fir, tan oak, madrone, and some chestnut, with sugar pine occurring at higher elevations. This forest is found mostly on moist north- and east-facing slopes, and its floor is often covered with thick brush and tangled vegetation, or the fir alone might form dense stands. In places the Douglas fir forest resembles the mixed evergreen forest in that it opens up into grassy meadows and more open forest with vegetation beneath similar to that found in the mixed evergreen forest. Due to the recent emergence of the

Douglas fir forest as an established plant community, and to the variation in its nature and composition, in places where it resembles the redwood forest because of its denseness and inaccessibility it is referred to as *šiyo*, and in areas where it resembles the more open and varied vegetation of woodland or mixed evergreen communities it is called *kulu·*.

Two types of brushy vegetation are found in Kashaya territory. On inland ridges the dry hills are often spotted with dense stands of chaparral. A chaparral community is composed mainly of chamise, toyon, buckbrush, scrub oak, and manzanita, with various grasses and herbs growing in open spots. The edges of the mixed evergreen forest, oak woodland, or Douglas fir forest are often lined with chaparral vegetation which may also include berry and other bushes more typical of those communities. The hillside chaparral offers a home for game and a source for berries and other plant products. Along the coast between the grassy coastal prairie and the forest edge is another type of brushy vegetation, coastal scrub. This is composed of lupine, blackberry, cow parsnip, salal, monkey flower, wormwood, and other less prominent shrubby vegetation. The brush is sometimes dense but often broken up by extensive areas of grass. Again a variety of herbs grow on the floow in damp or open places. A large stand of brush such as chaparral or coastal scrub is called *hahse*.

The grassland community (*qahqo*) is found in scattered locations throughout the landscape. Wherever there is a large opening in the woods, forest, or brush, the grassland community may be found. In early times the grasses were probably bunchgrasses and perennials, that is, the roots did not die from year to year. These openings were formerly a source of certain clovers and "potatoes," seed for pinole, and grasshoppers. In summer when the tops dried off tarweeds would spring up, providing yet another seed source. Today the grasslands are mainly composed of non-native annual grasses. Along the immediate coast is a strip of grassland called the coastal prairie. Here we find a variety of grass species interspersed with bracken fern and carex, *brodiaea*, clovers, iris, *calochortus*, buttercup, sanicle, gumplant, and lupine.

On the western edge of the coastal prairie, steep cliffs drop off towards the beach where a type of vegetation called the coastal strand hugs the sand dunes and cliff banks.

As indicated above, there are Kashaya terms for a number of the plant communities discussed here. The existence of these terms indicates that the Kashaya people have a conception of "plant community" analogous to that developed by botanists. This similarity in conceptualization is also evident in the organization of Kashaya knowledge of the plant world in areas other than that of "plant community." This fact may be surprising to persons who have thought of the pre-contact populations of California as "primitive." Stephen Powers (1874) in writing about the Nisenan, a northeastern California Indian group, remarked that "among the savages, . . . there is no systematic classification of botanical knowledge; every oak, pine and grass has its separate name; the Indian never groups individuals together except occasionally by adding one of the words . . . tree, brush, grass, seed, root, leaf or something of that sort." Such a statement strongly reflects the popular attitude that a taxonomic system (i.e. a systematic classification of botanical knowledge) is an accomplishment limited to modern science. A taxonomy is a linguistic and mental structuring of how things are identified, named, and classified, or put into groups. In a plant taxonomy developed by modern science we find plants classified at one level into groups such as the lily family, pine family, or grass family. The members of each group have common characteristics that make them a member of that group. For example, members of the pine family might easily be identified as being trees with a straight central trunk with branches bearing bundles of needlelike leaves, and pine cones. Often the members of a group will be named in a way that further identifies to which group they belong, such as bishop pine or sugar pine. Recent studies of folk biological systems have led to the awareness that taxonomic systems reflecting the natural relationships of living things occur universally. Much is owed to the work of Berlin, Breedlove, and Raven (1966, 1968, 1973), and Berlin (1972, 1973), whose efforts in this field have resulted in a foundation and guidelines for the study of folk biological systems of knowledge.

Of the taxonomic levels recognized for folk taxonomies (Berlin, 1972), the Kashaya plant taxonomy contains four levels: unique beginner, life form, generic, and specific (cf. Fig. I-A,B). At the level of unique beginner, the term *q'ale* refers to the plant kingdom. This term is also the word for "tree"; however, it commonly occurs

in the names of plants other than trees (cp. *bi?du q^{h}ále* "oak" [lit. "acorn tree"] and *ɬí?bahqay q^{h}alɛ* "blackberry bush").

There are three plant life forms recognized within the plant kingdom—two named, i.e., *q^{h}ale* "trees" and *hahse* "bushes," and one unnamed, i.e., other plants (cf. Fig. I-A, level 2).

Under the category of *q^{h}ale*, are the generic names (cf. Fig. I-A, level 3) for kinds of trees, for example, *kaɓa?* "madrone" and *behem?* "pepperwood," *k^{h}unum?* "bishop pine," and *bi?du qa^{h}ále* "acorn tree." Trees such as madrone or pepperwood are so distinctly different in appearance that they are not put into further groupings. Pine trees are recognized as being similar but there is no generic Kashaya name for the group as a whole (indicated by parentheses in the diagram). The oak trees (*bi?du q^{h}ále*) are the only trees which are named as a group. Under the category of *bi?du q^{h}ále* are the names of specific (cf. Fig. I-A, level 4, and Fig. I-B) kinds of acorn trees such as *cíšq^{h}ale* "beautiful-tree" ("tan oak") and *wiyi q^{h}ále* "Oregon-oak-acorn tree" ("Oregon oak").

Under the category of *hahse* are the names of all the kinds of bushes. The bushes are all individually named at the generic level, but the berry bushes with stickers on them are recognized as being similar; therefore the fruit of such plants are *ɬí?bahqay* "sticker-manzanita-berry" which is the name for blackberry.

Among the remaining plants (i.e., other plants) four groups are named at the generic level (cf. Fig. I-A, level 4 and Fig. I-B)—*mo?o·da* "fern," *?ohso* "clover," *hi?bu?la*[1] "potato," and *qa?di* "grass." Each group contains specific plants which are recognized as being similar and belonging to the group. Plants which do not belong to one of these four categories are distinctly different in appearance and are individually named and not grouped into specific categories.

The Kashaya names for generic groups can be related to certain plant families recognized in formal botanical classification: *bi?du q^{h}ale* (beech family), *k^{h}unum?* etc. (pine family), *ɬ?bahqay* (rose family), *mo?o·da* (ferns), *?ohso* (pea family et al), *hi?bu?la* (lily family), and *qa?di* (grass family). The remaining single-member generic groups, which are individually named, markedly differ from each other in appearance.

[1]*hi?bu* "any edible corm, bulb, or tuber." *·?bu* also occurs in terms for plants having edible roots, e.g. *c^{h}a·?bu* "carrot."

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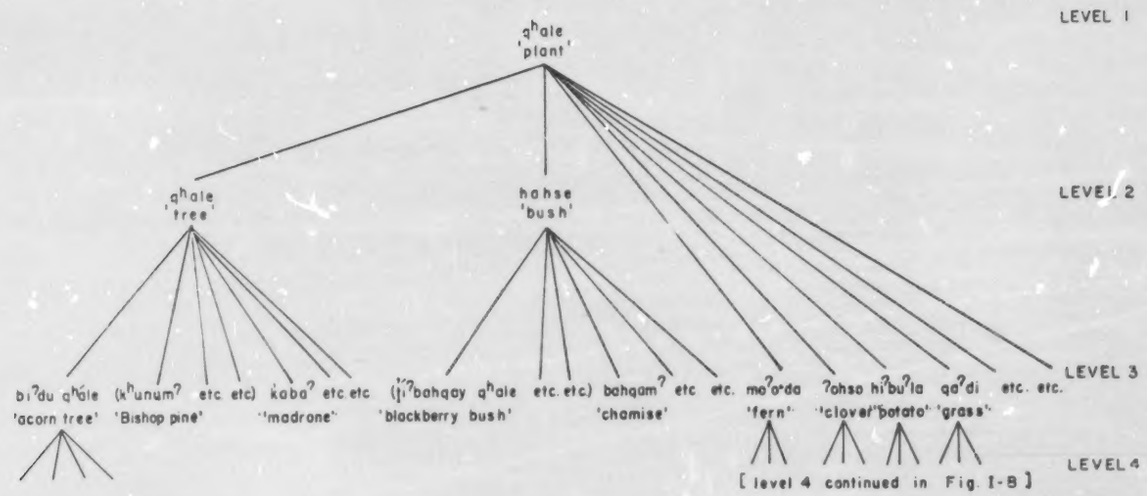
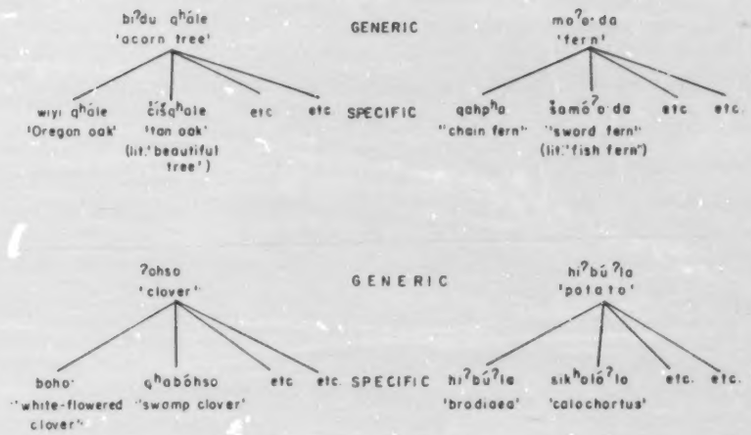


Key: Level 1 -Unique Beginner
Level 2 -Life Form
Level 3 -Generic
Level 4 -Specific
( ) -covert (unnamed) category

Figure I-A: Kashaya Pomo Plant Taxonomy



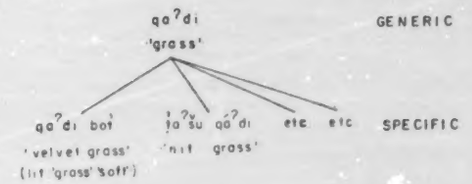


Figure I-B: Kashaya Pomo Plant Taxonomy

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It is common in the comparison of folk and scientific taxonomies to find the number of folk generic names and scientific plant family names to be very close, and more often than not for the number of folk generics to exceed the scientific. The 86 Kashaya generic plant names included in the plant taxonomy represent a greater degree of discrimination in the categorization of plants than do the 60 family names represented in the scientific taxonomy of the same plants. While a scientific taxonomy is largely based on principles of plant evolution and reproduction, the Kashaya plant taxonomy not only includes those principles but relies heavily on principles of form.

It is hoped that study of Kashaya folk-scientific plant taxonomy can help people to see how the Kashaya organize the plant life of their world. This basic conceptual organization underlies all aspects of the Kashaya world view of plants, a world view reflected in this reference work.

The research for *Kashaya Pomo Plants* began in the summer of 1974 with a preliminary survey of ethnographic, linguistic, and botanical references and the collection of the Kashaya names of plants. By Fall the first stages of analysis for the description of a Kashaya plant taxonomy had been undertaken and the ethnographic, linguistic and botanical research was expanded to include field work with consultants. Ethnographic literature was consulted to gain knowledge of Pomo peoples and to glean previously recorded information on plants, but available sources were few and the data inadequate for our needs; consequently, aside from literature sources specifically cited the data included in this book was provided by Kashaya consultants.[2] Kashaya linguistic material was made available by Dr. Robert Oswalt, who provided us with an extensive list of plant names and the proper spelling of those names. A study of ethnoscientific methodologies was also undertaken in order to describe the Kashaya plant taxonomy, and botanical sourcebooks were referred to for scientific identification of all plants. Field trips were made to places around the Kashaya

[2]The description herein of plant uses was provided by consultants and adheres as closely as possible to their English, including that of Essie Parrish, who also was the principal consultant utilized by the authors of previously published works on the Kashaya Pomo (e.g. Oswalt 1964 and Gifford 1967); as a consequence, a sameness of language often occurs between the description provided to us and descriptions occurring in the literature. Unless specifically indicated as from the literature, all plant use descriptions were elicited in the field by us.

Reservation to collect plant specimens for use in elicitation of relevant information from consultants, and for a collection of pressed plants. Field trips were made with consultants to various floral gathering areas.

Two members of our research team concentrated on cultural uses of food plants and the medicinal plants respectively, while another gathered information about the technological uses of plants, about the names of plants that are known but not used, and also about the descriptions of plant taxonomies. Not only did we find ourselves working with such a large body of data that it became impossible to complete the study in the time we had planned, but also plants such as clovers would appear for only a short time in the Spring and would die before we had a chance to study them. As a consequence, two seasonal rounds, from Fall of 1974 through Summer of 1976, were spent doing fieldwork, learning to identify plants and their habitats, and developing an understanding of the linguistic and cultural information we had gathered about them. Certain rituals and social restrictions related to the gathering and use of plants are designed to protect oneself and the earth from harm. These "rules," which generate special respect for and knowledge of life on the earth, are strictly adhered to by the Kashaya and should be taken into consideration by any person desiring to collect or use plants (see Lawson and Lawson 1976). Failure to follow these rules can result in the destruction of a plant or its products.

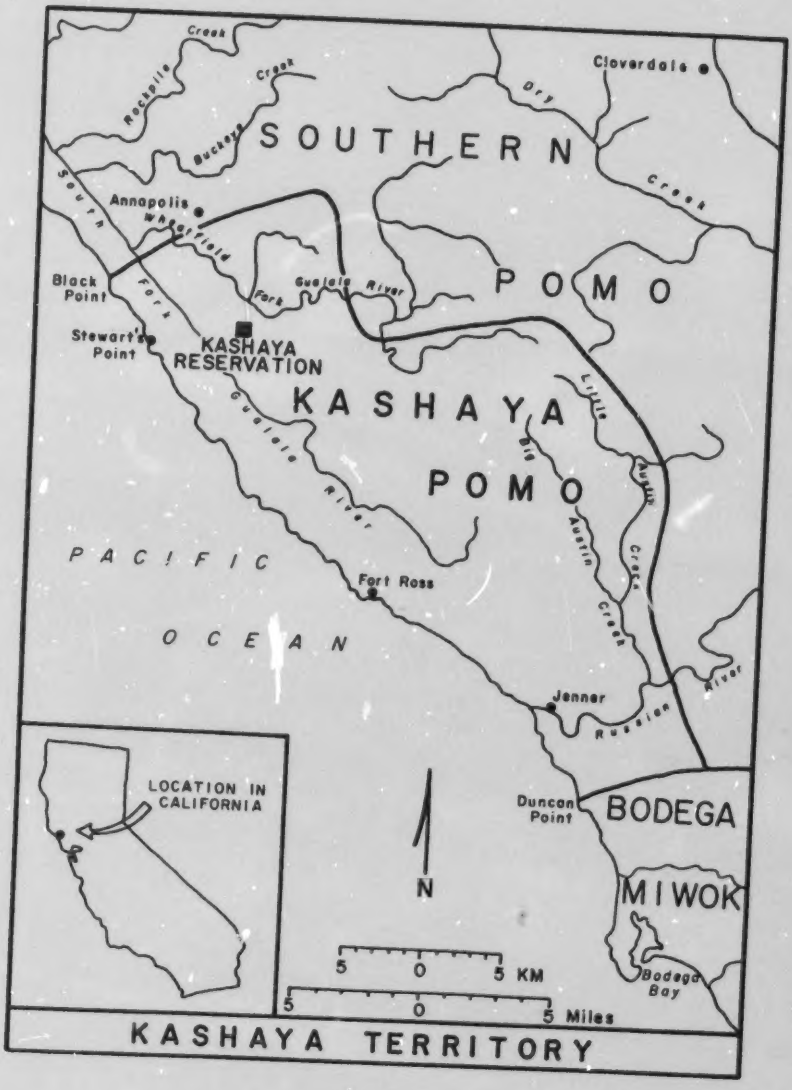
Before gathering plants for food, medicine, or other uses, a prayer is recited to the Creator explaining why the plants are being taken from the gathering grounds. A special song, taught by a Kashaya elder or religious leader, is sung to calm the Earth Spirit, thereby warding off any evil powers. In addition, a personal sacrifice must be made (e.g., a dinner might be given or the acquired plant products shared) because selfishness is undesirable social behavior eventually resulting in personal loss or bad luck. A severe restriction is placed on a menstruating woman. The monthly period is a time of rest and, along with other dietary and social taboos, the woman and her spouse are not to enter plant gathering areas nor to touch plants.

Plants are emphasized also in two major Kashaya ceremonies held in the Spring and Fall. The purpose of the mid-Spring Strawberry Festival is to bless the new plant crop. In the Fall, at the

Acorn Festival, thanks are given for the year's harvest. While the knowledge of plants and the existence of plant gathering areas themselves are jeopardized increasingly with destruction, the Kashaya hold on to these ceremonies to instill the importance of plants to the lives of their young people.

It is largely with the above in mind that this book was written. The knowledge given by Mr. and Mrs. Parrish and Susie Gomes is recorded with the hope that it will live for future generations. The plants list and the information about them is by no means complete but it is a beginning. We hope this work will encourage others to explore the wealth of knowledge retained by their older people.

We take full responsibility for any mistakes in the data and respect the fact that others may offer differing opinions. The information is recorded as known by our consultants and may vary from person to person.



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HOW TO USE THE BOOK

Plant entries include the names of and information about plants known to the Kashaya. See the Introduction for a discussion of plant communities. A description of the contents of Appendices and Indexes, and instructions on how to read an entry are given below.

How to Read an Entry

The parts of the sample entry below, Eastwood Manzanita, have been numbered in order that you may see how to read other entries. All entries follow the same format.

(1) Plant's common English name

(2) Plant's scientific name

(3) Family to which plant belongs

(4) General description of plant, including descriptions of the bark, leaves, flowers, seeds, and roots

(5) Plant's habitat (where the plant grows)

(6) Kashaya name and English translation:

The Kashaya name appears first; in some cases a translation of the name appears next to help you better understand the way plants are named.

Translations are in quotes; in addition, literal (lit.), or word-for-word, translations appear in parentheses.

If the Kashaya name is derived from another language the symbol < appears, followed by the source language (e.g. < Ps [Southern Pomo]; < Ru [Russian]; < Sp [Spanish]).

(7)[1] Fd. Food uses of plant

(8)[1] Med. Medicinal uses of plant

(9)[1] Tech. Technological uses of plant

(10)[1] Misc. Miscellaneous information

(11)[1] G.S. Gathering season

[1]To distinguish old, traditional uses of the plant from the new ones, past and present tenses of verbs are used. The past tense refers to the old, traditional uses and the present tense to continued or new ones.

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Sample Entry

(1) MANZANITA, EASTWOOD

(2) *Arctostaphylos glandulosa.* (3) Heath Family

(4) Shrub 2′-12′ high, with many branches coming from a spreading root crown. Wood: red and peely. Leaves: ovate to elliptic, rounded at the base, dark or yellowish-green, smooth and nonfuzzy, 1″-1¾″ long. Flowers: bell-shaped in small compact clusters, white or pinkish. Ovary hairy. Berry: ¼″; round and smooth. Seeds: smaller than most other manzanitas.

(5) Dry, rocky, brushy or grassy hillside.

(6) *qaye qʰále* "manzanita plant"

(7) Fd. The berries (*bahqay*) are first put into a pot and boiling water is poured over them to kill the worms. The berries are then dried, pounded and stored for later use. They can be made into pinole, cakes, or mixed with water and eaten.

(8) Med. The bark is boiled into a tea and drunk for use in curing diarrhea. It will cure bleeding diarrhea.

(9) Tech. The hard wood is favored for making tools such as awl handles. You must be careful to choose a piece with no joints or it will bend as it dries.

(10) Misc. At the time of creation, Coyote threw a dried manzanita bush (*háyhcʰa* "dead wood") into the ocean to make a swordfish (Oswalt 1964:39). Manzanita wood was put on the fire at dances and ceremonials because it makes a bright light to see by.

(11) G.S. Berries: Early Summer (May-July)
Bark: Year-round
Wood: for tools: Spring-Summer

Appendices

Following the main section on plants are seven appendices. Appendix I (Mosses), Appendix II (Seaweeds), and Appendix III (Mushrooms) are not true plants (*q'ale*). Mosses, seaweeds, and mushrooms are part of the lower plant kingdom which also includes algae, lichens, and other primitive forms of plants. The information included in the first three appendices follows the same format as that of main entries. Appendix IV (Introduced Plants) is a list of names of introduced plants most of which are common food or garden plants. The Kashaya names for these plants are often derived from Russian or Spanish plant names. Appendix V (Parts of Plants) lists the names of parts of plants, e.g., stem, root, seed. Appendix VI (Glossary) contains definitions of technical terms.

Indexes

There are five indexes which aid in finding different kinds of information. All index entries are in alphabetical order. Index I (Common Names) lists plants by their common English names. Index II (Scientific Names) lists plants by their scientific (Latin) names. Index III (Family Names) is a listing of the scientific families to which the plants belong. Index IV is a list of Kashaya plant names. Index V (Cultural Uses) groups the plants according to their uses: There are three parts to Index V—Food Uses, Medicinal Uses, Technological Uses; each part has sub-categories such as *fruit*, *rheumatism*, *baskets*.

KASHAYA POMO PLANTS

ALDER, RED

Alnus oregona. Birch Family

A tree 30′-80′ high, or in exposed places often reduced to a shrub. Bark: thin, pale gray or whitish outer bark; red-brown inner bark. Leaves: elliptic-ovate, 2½″-4½″ long, pointed tip, rounded base, shallowly lobed or coarsely toothed edge, dark-green above, rusty and soft beneath; on petioles ½″-¾″ long. Catkins: 2-4 in a cluster, 4″-6″ long. Cones: ¾″-1″ long.

Stream banks and marshy places along the coast in mixed evergreen and redwood forests.

qahcʰiṭi

Med. The bark was boiled to make a medium strength wash which was used to bathe skin diseases; for example, sores, diaper rash, peeling and/or itching skin.

Misc. Another species of alder named White Alder (*Alnus rhombifolia)* grows in the hills away from the immediate coast. It looks very similar to Red Alder except that it doesn't have the red inner bark and has rhombic-shaped leaves. White Alder is also called *qahcʰiṭi* and is used in the same way.

G.S. Year-round

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ANGELICA

Angelica tomentosa. Carrot Family

Stout plant 20″-70″ tall. Leaves: 6″-18″ long, compound in two or three divisions which are divided into lance-shaped to oval or oblong serrated ¼″-1″ leaflets which are smooth above, hairy or soft beneath. Flowers: white or greenish in large spreading flat-topped clusters or umbels. Seed: oblong-oval ¼″ long with a narrow wing around the edge.

Moist and shaded places, in rocky but rich soil on hillsides and mountains.

Lomatium californicum. Carrot Family

Stout plant 12″-48″ tall. Leaf blades: 4″-12″ long, compound with petioles 2″-10″ long divided once or twice into groups of three (ternate). Leaflets: obovate or wedge-shaped, 3-cleft, coarsely toothed, ¾″-2″ long. Flowers: large compound umbels with numerous rays 1″-3″ long bearing tiny yellow flowers. Seed: oblong-oval, ⅜″-⅝″ long with a narrow wing around the edge.

Wooded or brushy slopes.

baʔċowa

Fd. The young green shoots *(wihlamʔ)* are eaten raw. After the plant leafs out the greens are no longer eaten.

Med. A small piece of the root was chewed or held in the mouth to prevent sore throat and bad breath; this is sometimes still done today. Pieces of root are boiled to make a strong wash that is used for bathing sores. It is also boiled to make a tea for use in easing menstrual cramps, to regulate menses and to ease discomforts of menopause; for stomach ache; and to relieve a cold.

Misc. A shaman smoked shavings from the root when doctoring. While singing, singers held a piece of root in their mouths to prevent hoarseness and rawness of throat. The root is also carried and/or hung in homes for protection. To the Kashaya Pomo this is one of the most important plants because of its many different uses.

G.S. Shoots: Spring
Root: When the leaves dry off in mid or late Summer.

ARALIA; ELK CLOVER

Aralia californica. Ginseng Family

A large plant with stems 3′-9′ tall. Leaves: smooth; ternate, then pinnate with 3-5 leaves; petioles to 12″ long; leaflets ovate or oblong, serrated, 2″-10″ long. Flowers: each flower cluster is made of two or more umbels that radiate in large compound racemes, 12″-16″ long; with many sticky soft flowers with petals about ⅛″ long. Fruit: ⅛″-¼″, round, dark. Root: large, with milky juice.

Moist shaded spots.

siṭabá·ti?

Med. The root was boiled to make a medicine that was applied externally; it was never taken internally. The medicine was used for various kinds of open sores, itching, etc. A sore with a scab was washed until all the scab was removed.

G.S. July-August

AZALEA, WESTERN

Rhododendron occidentale. Heath Family

Loosely branched shrub or small tree 3′-10′ tall, deciduous, with shredding bark. Leaves: light-green; elliptic to obovate; 1½″-4″ long. Flower: funnel-shaped; 1½″-3″ long; slightly lobed; white or pinkish with a yellowish blotch; sweet odor. Seed capsule: oblong, downy.

Stream banks and moist places in the forest and along the coast.

biča?

Misc. The flowers are used in dance wreaths for the Strawberry Festival.

G.S. May-(mid Spring)

BLACKBERRY, CALIFORNIA

Rubus ursinus (or *vitifolius*). Rose Family

A trailing or climbing vine often forming large thickets. Stems reach 20′ in length, with slender rigid stickers. Leaves: 3 lobed; 2″-4″ long, almost as wide, oblong to triangular; doubled-toothed edges. Flowers: 5-petaled; 1″ across; 2-15 in cluster; white or pink. Berry: oblong or round; ¾″-1″ long; black when ripe.

Woods, somewhat damp places, fields, canyons.

ɬí?bahqay q'ale "blackberry plant" (lit. "thorn=manzanita=berry plant")

Fd. Berries (*ɬí?bahqay* "blackberry" (lit. "thorn=manzanita=berry")) eaten fresh: whole or mashed and eaten with bread, or mashed and used as topping for ice cream. Used cooked as pie filling and as sauce for dumplings.

Med. The root was boiled and made into a tea which was used to check diarrhea.

Misc. Blackberries are not to be eaten by pregnant women or fathers-to-be. If this rule is broken it is believed that the baby will come out dark in color. This rule holds for any kind of blue-colored berry.

G.S. Berries: Mid-Late Summer
Root: Year-round

BLUE BRUSH; CALIFORNIA LILAC

Ceanothus griseus. Buckthorn Family

Large shrub 3′-18′ high with green angled branches. Leaves: broadly ovate or round with blunt tips; dark-green and smooth above, gray and soft beneath; 3 prominent veins; leaf edges somewhat wavy and bumpy between the veins; ½″-2″ long. Flowers: in dense panicles ¾″-2″ long, violet-blue. Fruit: round, sticky when young; black, shiny when mature.

Coastal scrub.

se?e k̀íli "black bush" (lit. "bush black")

Misc. Flower, fresh or dried, when mixed with water was rubbed in hands to make a soapy lather for washing hands, face and body.

The flower is also used in dance wreathes at the Strawberry Festival.

G.S. March-June

BLUE BRUSH: CALIFORNIA LILAC

Ceanothus thyrsiflorus. Buckthorn Family

Large shrub 3′-18′ high with green, angled branchlets. Leaves: oblong to round with a blunt or pointed tip; ½″-2″ long; 3 prominent veins come from the base of the leaf; edge is finely serrated; petioles ⅛″-½″ long; dark-green above and paler beneath. Flowers: in compound clusters 1″-3″ long on the ends of stems 1″-3″ long; light to deep blue. Fruit: round, ⅛″, sticky; turns dark with age.

Wooded slopes and canyons in chaparral, redwood forest, and mixed evergreen forest.

se?e k̇íli "black bush" (lit. "bush black")

Misc. Flower, fresh or dried, when mixed with water was rubbed in hands to make a soapy lather for washing hands, face and body.

The flower is also used in dance wreathes at the Strawberry Festival.

The cocoon *(pašikóyo?yo* "cocoon; cocoon rattle" (lit. "poison=cocoon" (cf. *paši* "poison"))) used for a ceremonial rattle can be found on this bush.

G.S. March-June

BLUE-EYED GRASS

Sisyrinchium bellum Iris Family

A tufted perennial plant, 4"-16" tall, with short rootstocks. Leaves: grow from the base; usually shorter than the stems; 1/8"-3/16"wide; narrow and grass-like. Stems: slender and flattened; 1/8"-1/16" wide; 1-3 leaves along the stem with 2-4 peduncles (flower stems) growing from the leaf axil; peduncles 3/4"-6" long. Flowers: blue to violet or lilac; 1/2"-3/4"; emarginate (a complete flower notched to look like separate petals); last only one day and open with the sun is out.

Open grassy places.

ṡiwitá qawiyya "little Iris" (lit. "Iris little=ones")

Med. This is used for upset stomach, heartburn, ulcers and asthma. Wash the roots first before boiling, then place into

boiling water to make a medium strength tea. Strain the tea with a clean rag before drinking.

G.S. Root: February or March before plant flowers and during Summer after it flowers.

BRODIAEA; ITHURIEL'S SPEAR

Brodiaea laxa. Amaryllis Family

Leaves: 8"-16" long, ⅛"-½" wide growing from the base. Flower: blue to white; ⅜"-1" long; funnel-shaped; many flowers on each umbel growing on pedicels ¾"-3½" long and usually slightly bent at the apex so the flowers stand up straight. Stem: thin; 4"-28" tall; erect. Corm: ½"-1½" across.

Heavy soils in woodland areas.

hi²bú²la

Fd. The corm *(hi²bu)* was baked in hot ashes or boiled, and eaten like baked or boiled potatoes. These corms do not store well because they turn green and start to sprout shortly after they are dug.

According to a kashaya text about Indian potatoes (Oswalt 1964:307), a *hi²bu* is about the size of a small onion, and was eaten with salty food. After the potatoes were dug they were put into a shallow work tray basket *(naq̇olo)*. The potatoes were rubbed around in the hands to loosen the skins. After they were winnowed they were baked under the ashes. Nowadays they wash and boil them.

Other kinds of wild potatoes which have not been identified include:

bimu·

hubaba *sowa*

ḳosá²bu *šicibu*

Misc. The flowers of all wild potato plants can be used in dance wreaths at the Strawberry Festival.

G.S. Corms: April-June

BRODIAEA, COMMON; BLUE DICK

Brodiaea pulchella. Amaryllis Family

Leaves: 6"-15" long, 1/8"-1/2" wide, growing from the base. Flower: blue to violet, 4-10 in a dense head. Stem: thin; 6"-15" tall erect. Seed capsule: ovoid 1/8"-3/8" long. Corm: 1/2"-1 1/2" across with a light-colored skin.

Common on plains and hillsides.

hi²bú²la

Fd. The corm *(hi²bu)* was prepared and eaten in the same manner as the corm of Ithuriel's Spear.

G.S. March-May

BRODIAEA, HARVEST

Brodiaea coronaria. Amaryllis Family

Leaves: narrow, 2"-12" long growing from the base. Flowers: 1-4 flowers in an umbel, lilac to violet ¾"-1" long; funnel-shaped; growing on pedicels ½"-3" long. Stem: thin, 2"-10" tall, erect. Seed capsule: ovoid. Corm: ½"-1½" across with reddish skin.

Dry adobe or clay soil or gravelly places on grassy hillsides and wooden slopes.

hi?bú?la (or) *kúy?bu*

F d . The corm *(hi?bu)* was prepared and eaten in the same manner as the corm of Ithuriel's Spear.

G . S . May-July

BUCKEYE, CALIFORNIA; HORSE CHESTNUT

Aesculus californica. Buckeye Family

Tree 10'-15' high with a broad open crown. Bark: smooth; whitish to gray. Leaves: palmately compound with 5 oblong leaflets 3"-6" long, 1½"-2" wide; pointed tip; serrated edge; dark-green above, paler beneath. Flowers: pinkish white; about ½" long; in large cylindrical erect clusters 6"-10" long. Seed hull: pear-shaped. Seed: 1"-2½" diameter, round, shiny brown skin, white meat.

Dry grassy, open hillsides. At times, they grow in groves. They can be found just about any place.

bahša q'ále "buckeye=nut tree"

Fd. The buckeye nuts *(bahša)* are put into boiling water to loosen the husk. After the husk is removed the nut meat is returned to boiling water and cooked until it is soft like cooked potatoes. The nut meat is then mashed with a mortar stone. These buckeye grounds *(kʰuʔćaʔ)* may be strained at this stage or strained after soaking. The grounds must be soaked and leached a long time to remove the poisonous tannin. Soaked buckeye grounds are called *qaʔɬemʔ*. Soaked and strained buckeye meal that is ready to eat is called *dihsa*. This is good to eat with pieces of baked kelp, meat, and seafood.

An older method was to peel the nuts and roast them in ashes until they were soft. They were then crushed and the meal was put in a sandy leaching basin beside a stream. For about five hours the meal was leached with water from the stream. When the bitterness disappeared it was ready to eat without further cooking (Gifford 1967:14; see also Oswalt 1964:57).

Tech. Buckeye wood was used to make a drill stick and block *(dawíli)* for making fire. Also used to make bows *(šihmi)*.

Misc. In summer, as a fishing method, buckeye nuts were ground and sprinkled into pools to kill fish.

G.S. Fruit: Fall when the nuts are ready to drop.

BULRUSH (BLACK ROOT)

Scirpus fluviatilis; Scirpus robustus; Scirpus americanus; Scirpus Olneyi; Scirpus acutus. Sedge Family

Perennial plant 10"-60" tall. Leaves: grass-like; triangular or round; 10"-60" long; ¼"-¾" wide. Flower: open umbel or close

cluster of spikelets ½"-1" long; bristly; straw to brown or red colored. Root: horizontal rhizome with a hard woody core.

In tule lands, beside lakes, freshwater marshes and other wet places.

šiwiš

Tech. The root is used to form the black part of the basket design. It is strained by burying it in the mud with ashes until a black color is obtained.

Misc. The plant must grow in sand that is free of gravel and dirt for the root to be of the quality necessary to use in weaving baskets. This material was obtained from the Clear Lake region through trade or, as is now done, by traveling to Lake Country and gathering it oneself.

G.S. Fall

BUNCHGRASS, HILL

Festuca californica. Grass Family

Perennial grass growing in large clumps. Blades: flat (or with rolled eges when dry), 24"-48" long. Flower spikelets: ¼" long growing on loose, few-branched panicles on top of stems 24"-48" tall.

Wood borders, shaded places.

qahšim?

BUTTERCUP

Ranunculus californicus. Crowfoot Family

Stems: erect; 4″-20″ high, smooth or slightly fuzzy. Leaves: 3-lobed, the lobes wedge-shaped and divided into rounded lobes; ¾″-2½″ across; petioles 2″-10″ long. Flower: 9-16 yellow petals ¼″-¾″ long on a rounded head. Buttercup plants near the coast grow closer to the ground and stems reach only 10″ long.

Often in damp or wet places on coastal bluffs and hills.

qaʔbaṭa

Misc. A child puts this flower under his/her chin. If a yellow color is reflected on the chin, the child will like butter.

CAMAS; DEATH CAMAS

Zigadenus venenosus. Lily Family

Leaves: basal; 6″-12″ long; ⅛″-⅜″ wide; blade-like. Flower: simple raceme 2″-8″ long, whitish; on stem 6″-24″ tall. Bulb: oblong-ovoid; ½″-1″ long; dark outer coat.

Moist grassy places. Coastal scrub to the mountain coniferous forest.

silomʔ

Misc. Poisonous

CARROT, WILD

Lomatium macrocarpum. Carrot Family

Plant 4″-20″ tall. Leaf blades: 1″-5″ long, divided into three stems (ternate) 1″-3″ long which are again separated into pinnate divisions, similar to the leaves of a domestic carrot. Leaf segments: linear, ⅛″-⅜″ long. Plant purplish colored near base of stems. Flowers: small, white, yellow or purplish, growing in an umbel on rays (5-25) ½″-3″ long. Root: long, slender, woody taproot.

Dry stony places.

duwi cʰáʔbu "coyote carrot"

Fd. Young leaves *(ʔohso)* are edible. The sweet seed was used to flavor tea and pinole.

Modern carrots are called *cʰaʔbu*

G.S. Leaves: Spring
Seed: Summer

CAT'S EAR

Calochortus Tolmiei. Lily Family

Base leaves 4″-16″ long and ⅛″-1¼″ wide. Flower: open bell-shaped, creamy white or tinged with rose or purple color, with soft hairs inside; grow on a simple or branched stem 4″-16″ tall. Bulb: ½″-1″ across with a brown skin.

Dry, often rocky soil, grass or woods.

kúška šima "cat ear"

Fd. The bulb *(hiʔbu)* of this plant was prepared and eaten in the same manner as the corm of Ithuriel's Spear.

G.S. April-July

CAT'S EAR; FAIRY LANTERN

Calochortus amabilis. Lily Family

Leaves: basal; 6"-9" long; ½"-¾" wide, blade-like. Flowers: 2 or 3 nodding golden yellow globe-shaped flowers 1" long on top of a stem 6"-9" tall. Bulb: ½"-1" across, covered with brown skin.

Loamy to rocky soil; dry slopes in brush or woods.

wit'i?

Fd. The bulb *(hi?bu)* of this plant was baked and eaten in the same manner as the corm of Ithuriel's Spear.

G.S. April-June

CATTAIL

Typha. Cattail Family

Leaf: flat blades 3'-6' high with linear veins and sheaths at the base. Stem: simple, cylindrical, jointless stem bearing a very spongy and thick cinnamon-brown or dark-green-brown seed mass on top about 7"-13" long. Roots: thick, creeping rhizomes.

Freshwater marsh.

baco·

Fd. The young shoots *(wihlam?)* were eaten.

Misc. Young girls and women are not supposed to walk near areas where cattails grow.

G.S. Spring

CHAMISE

Adenostoma fasciculatum. Rose Family

Bush with diverse branches and a burl at the base of the trunk: 1½′-10′ high. Bark: reddish; smooth on twigs, shreddy on older branches. Leaves: linear, ¼″-½″ long, rigid, thickly scattered along the twigs, often sticky. Flowers: very small and close to the stem, whitish green; on panicles 1½″-5″ long.

Dry slopes and ridges in chaparral.

*bahqʰam*ʔ

CHERRY, HOLLYLEAF

Prunus ilicifolia. Rose Family

Dense evergreen shrub, twigs gray-reddish brown. Leaves: ovate to roundish, 1½″-2″ long; coarsely toothed. Flowers: few to many on raceme 1″-2½″ long; white. Fruit: red; ovoid-ellipsoid, ½″-1″ long with thin sweet pulp and smooth pit.

Dry slopes and fans in chaparral and woodland.
Not indigenous to Kashaya territory.

pʰaqʰále "excrement=plant"

CHESTNUT; GIANT CHINQUAPIN

Castanopsis chrysophylla. Beech Family

Tree 50′-150′ tall. Heavily furrowed bark and stout spreading branches. Leaves: lanceolate to oblong; 2″-6″ long; dark-green above, golden beneath, tapering at both ends. Bristly burrs with hard shelled nuts inside ½″ long.

Forested slopes in the redwood, Douglas fir, and mixed evergreen forest.

qʰamíʔdiš qʰale "chestnut tree" (lit. "water=nut tree")

Fd. Nuts *(qʰamiʔdiš* (or) *miʔdiš)* are eaten raw or roasted. They were stored in their shell for winter. The nuts could be pounded into a meal and eaten.

G.S. In Fall when the nuts drop from the trees.

CLINTONIA

Clintonia Andrewsiana. Lily Family

Leaves: usually 5 or 6; basal; oblanceolate to broadly elliptic; 6″-10″ long; 2″-5″ wide. Flowers: at first downy on a short stem; later deep rose-purple flowers ½″-¾″ long; one or many in a cluster on an erect stem 9″-20″ tall. Berries: round, blue when ripe, ¼″-½″. Root: slender, fleshy.

Shaded damp woods in the redwood forest.

silomʔ

Misc. Poisonous

CLOVER, OWL

Orthocarpus densiflorus; Orthocarpus purpurascens; Orthocarpus faucibarbatus. Figwort Family

Erect, spreading plant 6"-12" tall with short narrow stemless leaves growing alternately along the main stem. Flowers grow thickly in a spike along the ends of stems. Flower: narrow, tubular-shaped with purple dots on the margin, others are purplish with spots of white or yellow.

Open fields, grassy places in grassland, mixed evergreen forest, coastal scrub, and woodland

ṡamo· huʔuy (lit. "fly eyes")

Misc. The flowers are used in dance wreaths at the Strawberry Festival in May.

G.S. Mid Spring

CLOVER, PEPPER

Trifolium fucatum var. *virescens.* Pea Family

An annual plant with large succulent stems 4"-24" long. Leaves: 3 leaflets, each leaflet ovate shaped, ½"-1¼" long, sharply serrated. Flowers: large, inflated, yellow-pink flowers ½"-1¼" long.

Moist valleys and dry hills, among the grass in many plant communities.

pʰaʔám ʔso (cf. *ʔohso* "clover")

Fd. The sweet flowers and leaves *(ʔohso)* were eaten alone or with salt or peppernut cakes.

G.S. Late Spring-Early Summer

CLOVER, RANCHERIA

Trifolium albopurpureum. Pea Family

An annual plant with slender stems 4"-16" high, the entire plant having soft hairs. Leaves: 3 leaflets, each obovate to wedge-oblong shaped, ¼"-¾" long, toothed above the middle. Flowers: in oval heads on stems 2"-6" long; purple.

Open grassy valleys and slopes.

ʔiméhso "fuzz=clover"

Fd. The leaves *(ʔohso)* were eaten alone or with salt or peppernut cakes.

Misc. Another similar species, *Trifolium dichotomum,* has the same Kashaya name and was eaten.

G.S. Spring

CLOVER, SWAMP

Trifolium variegatum. Pea Family

An annual plant with tangled branching succulent stems ½'-2' long. Leaves: 3 leaflets, each oblong to heart-shaped, toothed, ¼"-½" wide, ½"-¾" long. Flowers: one to several flowers on slender stems 1"-3" long; flowers ¼"-⅜" long, petals purple with white tips.

Low or moist places in many plant communities.

qʰabóhso "water=clover"
"watersnake=clover"

Fd. The sweet flowers and leaves *(ʔohso)* were eaten alone or with salt or peppernut cakes.

Misc. Other species of clover that grow in wet areas are also called *q'abóhso*. These include *Trifolium appendiculatum*, *Trifolium barbigerum*, *Trifolium Grayi*, and *Trifolium obtusiflorum*.

G.S. Late Spring-Early Summer

CLOVER, SWEET; YELLOW MELILOT

Melilotus indicus. Pea Family

An herb 4"-32" tall; smooth or slightly downy with clover-like leaves except each leaflet has a short stem. Leaves: pinnately trifoliate; each leaflet triangular-oblanceolate to triangular-obovate shaped, ⅜"-1" long. Flowers: yellow; typical pea family flower with obovate banner, oblong wings and a keel; ⅛"-¼" long; in spike-like racemes ¾"-4" long.

Common in waste places at low elavations. Native of Eurasia.

kawa·yúhso "horse-clover"

Med. The whole plant can be boiled to make a tea used as a purgative. This is a very strong laxative and should only be used under a doctor's direction.

G.S. April-October

CLOVER, WHITE

Trifolium Wormskioldii. Pea Family

A succulent perennial with branched stems 4"-12" long, with a creeping root that causes the plants to form tangled masses. Leaf stem (petiole) ½"-2¾" long. Leaf: made of 3 leaflets; each leaflet oblong-lance shaped or wider, ½"-1⅛" long. Flower: numerous showy heads of white flowers about 1" long.

Wet places in many plant communities.

boho·

Fd. This was the favorite edible clover. The flowers and leaves *(ʔohso)* are sweet and were gathered in large quantities in late spring or early summer. They were eaten alone or with salt or peppernut cakes.

Misc. Another clover named *bohohso* is similar to *boho·* but grows more by itself; not forming such large masses. This is also a very good tasting clover. It is probably the white-flowered form of *Trifolium fucatum.* The names of three other clovers were learned but not identified. Tree clover, *qʰaléhso,* ("tree=clover"), is said to grow in the woods and has sharp leaves. This is probably *Trifolium bifidum, Trifolium ciliolatum,* or *Trifolium tridentatum.* This clover was not eaten.

A clover called *yuhpʰílhso* grows in the valley.

A clover called Elk clover, *qasi·síhso* ("elk=clover"), grows in the forest and has narrow leaves. It is sometimes called *ši?bašíhso* ("wild=animal=clover"). This was also eaten.

G.S. Late Spring-Early Summer

COFFEEBERRY; CASCARA

Rhamnus californica. Buckthorn Family

Rounded shrub 4′-6′ tall. Bark of young twigs reddish. Leaves: oblong to elliptic; edges straight or coiled under, entire to serrate; pointed or rounded tip; 1″-3″ long; shining and smooth on top. Small white flowers in umbels on stems ⅛″-¾″ long; 6-50 flowered. Berries: black or red when ripe, round, ⅜″-½″ long.

Sandy and rocky places along the coast, hillsides and ravines further inland.

basasa

Med. The bark, which can be boiled into a tea to remedy constipation, has to be stored for a whole year before it can be used. A half-handful of fresh berries can also be eaten as a laxative.

G.S. Berries: July
Bark: Year-round

COLUMBINE

Aquilegia eximia. Crowfoot Family

Perennial herbs with several erect, branched stems, 20″-40″ tall. Leaves; mostly basal, 3-ternate, petioles 4″-8″ long; leaflets broadly wedge-shaped to almost round; ½″-1½″ long, cleft to near the middle, then lobed with pointed teeth. Flowers: nodding on the ends of branches; showy; 5 red sepals ½″-1″ long; 5 petals usually with a broad extention to the front and a long hollow nectariferous spur ¾″-1¼″ long projecting backwards; red and yellow.

Springs, often on hillsides.

šilišíli· q'ale "tinkle plant"

Misc. The flowers are used in dance wreaths for the Strawberry Festival.

G.S. May (Mid Spring)

COTTONWOOD; BLACK COTTONWOOD

Populus trichocarpa. Willow Family

Tree 120'-200' tall with a broad open crown. Bark: grayish, furrowed when old. Leaves: ovate; finely serrated, heart-shaped or squared off at the base; pointed tip; dark-green above, pale beneath; 1"-3" long; petioles ¾"-2" long. Catkins 1½"-3½" long.

Along streams.

puhláp'law (< Ps "wind=shaking")

CREAM BUSH; OCEAN SPRAY; SEA FOAM

Holodiscus discolor. Rose Family

Spreading bush 4½"-7" tall. Older bark red to brownish or gray; twigs straw-colored and pubescent. Leaves: broadly ovate-elliptic with a squared off base to ovate-elliptic with a widge-shaped base; 2"-3½" long, soft beneath, deeply toothed, 2-7 teeth on

each side; petioles ¼"-¾" long. Flower: cluster dense, very compound, 3"-8" long and broad, white flowers turning pinkish with age.

Mixed evergreen forest, and chaparral.

cuʔła (or) *cʰiʔbúkʰlan* (< Ps)

Tech. The long branches were used to make baby baskets *(cuhse)* and arrows *(hiśu·)*.

G.S. Fall

CUCUMBER, WILD

Marah fabaceus. Gourd Family

Climbing or trailing vine 3-7 yards long. Leaves: roundish; 2"-4" broad; 5-7 deep lobes; on petioles 1"-2" long. Flowers: whitish; ¼"-½" diameter; 8-18 growing on a raceme. The green fruit is round, 1½"-2" diameter, with rigid spines ¼"-1" long. Root: forms a large round tuber up to 1′ across.

Banks and slopes along the coast and in mixed evergreen forest.

beheɬá·ɬa (lit. "peppernut=rump")

Med. Raw root was pounded and mixed with pounded pepper nuts and skunk grease and applied to the head to prevent baldness.

Tech. The root was mashed and used in pools in the river and in tidepools at the beach for poisoning fish.

G.S. Summer

DOGWOOD, MOUNTAIN

Cornus Nuttallii. Dogwood Family

Tree 10′-45′ tall. Young twigs green, older twigs red to dark. Leaves: broad; elliptic to obovate; wedge-shaped at base; rounded at tip; 3″-5″ long; on petioles ¼″-½″ long. Flowers: on a crowded head ½″-1″ broad, subtended by 2 leaves and 2 bracts; head surrounded by 4-7 white petals 1½″-3″ long. Fruit: red; ⅜″-⅝″ long.

Mountain woods, mixed evergreen forest.

hayu qʰále "dog tree"

Tech. The long slender branches are used in making baby baskets *(cuhse).*

G.S. In early Fall, right after the leaves drop off. By late Fall, the twigs are infested with worms that weaken the wood.

ELDERBERRY, BLUE

Sambucus caerulea. Honeysuckle Family

Large shrub or small tree 6′-25′ high, twigs have a large pithy center. Leaves: grow opposite on the stem; 5-7 compound leaflets. Leaflets: arranged primarily with one leaflet at the end; ovate to oblong lanceolate; 1″-3½″ long; serrated; smooth to downy. Flowers: in broad compound cymes; white, each flower ¼″ across with 5 lobes. Berries: nearly black but with a whitish covering making them look blue, ¼″, round.

Open woods and canyons or moist flats of hill country and along streams.

tʰeqʰále "feather tree"

Fd. The tart berries *(ṭʰe* cf. *ʔihṭʰe* "feather") are eaten fresh in small quantities during the latter part of the Summer. Also the berries can be canned or cooked for pie filling.

Med. The root of the plant was boiled and the solution was used as a healing lotion on open sores and cuts (Gifford 1967: 15). The dried flowers can be made into a tea to break a fever. First the flowers are dried in the sun, then put in a bag and shook until the flowers fall off.

Tech. The branches are used to make whistles *(libu·)* and clappers *(pʰiʔɨáɨaw).*

G.S. Berries: Late Summer
Root: Late Summer and Fall is best.
Flowers: Early-Mid Summer
Branches: Fall

EVERLASTING

Gnaphalium chilense. Sunflower Family

Wooly herb with many stems 8"-24" tall. Quite leafy, the leaves lance-shaped and entire, ¾"-2" long. Flower heads bunched together at the ends of each stem, greenish-yellow, and very cottony.

Rather moist ground, often in waste places in many plant communities.

naċolól daʔbo· qʰale "deerhead=disguise stuffing plant"

Tech. The cottony flower tops were used like stuffing to line deer antler head disguises where it rested on the forehead (Oswalt, linguistic files).

G.S. June-August

FENNEL, SWEET

Foeniculum vulgare. Carrot Family

Perennial herb 3′-7′ high with branching erect stems; sweet anise odor. Stems have faint lengthwise strips and are smooth. Leaves: leaf blade grows to about 12″ long; pinnately divided more than once into linear divisions ¼″-1½″ long. Flowers: in large compound umbels with 15-40 rays ½″-2½″ long, bearing bunches of small yellow flowers. Seed: oblong and slightly flattened, with lengthwise ribs; ⅛″-¼″ long.

Common in waste places. Naturalized from Europe.

No Kashaya name.
Referred to in English as "sweet seed plant".

Med. The seeds are gathered and cleaned. A pinch is chewed for upset-stomach, indigestion, and heartburn. This could be eaten while gathered, or stored for later use in a dry place. Also boiled, and strained for eyewash.

G.S. In Fall, when the seeds are turning brown.

FERN, BRACKEN

Pterdium aquilinum var. *pubescens.* Pteridaceae

Fern 12″-60″ tall. Fronds (leaf blade of a fern): 16-40″ long, 3 times pinnate, leaf segments linear-oblong. Root: long, creeping, underground rhizome, with dark core, and black bark.

In moist places in meadows and forests. Very common.

mo·ʔo·da "fern"

Med. When the young fronds are still curled, their juice is used as a body deodorant.

Tech. The root *(mo?o·dáhqʰo?* "fern=root") is lightly pounded to remove the bark and then the dark core is split into layers for use as a material for basket design.

G.S. Fronds: Winter-Early Spring
Roots: Summer-Fall

FERN, CHAIN; WOODWARDIA

Woodwardia fimbriata. Blechnaceae (Woodwardia)

A very large fern. Leaf blades (fronds): 8″-20″ wide; 3′-6′ high; oblong in outline; binpinnate. Stem: short, straw-colored, woody; scales at base of stem lance-shaped, glossy, bright brown, ¼″-¾″ long.

Springs and boggy places in canyons.

qahpʰa

Tech. The long leaves are used to line the top and bottom of the earth oven for baking acorn bread and other foods.

G.S. Always available

FERN, FIVE-FINGER

Adiantum pedatum var. *aleuticum.* Pteridaceae

Delicate fern 8″-30″ tall with creeping rootstocks. Stem: black and polished looking, forked at the top into branches 4″-6″ long

with pinnate divisions of ⅜"-½" oblong leaflets; these short stalked leaflets are close together and numerous. The spores line the under edge of the leaflet.

Moist, shaded rock crevices, in swampy woods, and stream canyons.

šamó·ʔo·da "fish=fern" (cf. *ʔahša* "fish")

Misc. The stem was inserted into a pierced ear lobe to keep the hole from closing. This stem, either alone or with feathers attached, can serve as an earring.

G.S. Winter, Spring, Summer

FERN, MAIDENHAIR

Adiantum Jordanii. Pteridaceae

Delicate fern 8"-20" tall with creeping slender rhizomes. Stem: dark-brown, almost equal in length to leaf blades. Leaf blades: two to three times pinnate at the base with rounded leaflets, ¼"-1" broad and shallowly lobed on the outer edge.

Damp shaded banks at base of rocks and trees.

šamó·ʔo·da "fish=fern" (cf. *ʔahša* "fish")

Misc. The stem was used in a pierced ear in the same way as Five-Finger Fern. Also these stems were split lengthwise, dried and used as a material for basket design.

G.S. Winter, Spring, Summer

FERN, POLYPODY

Polypodium californicum. Polypody Family

Fronds: 4″–14″ tall, die in the Fall. Stalk: stout, straw-colored. Blades: oblong to narrowly ovate in outline, 2″–12″ long, 2″–6″ wide; pinnate segments linear-oblong, 1″–2¾″ long, veins dark. Root: creeping rhizome ¼″–½″ thick, with triangular-ovate rusty brown scales ⅛″–⅜″ long.

Rocky ledges and moist banks in chaparral, coastal scrub, woodland and mixed evergreen forest.

duwi mó·ʔo·dahqʰoʔ "coyote fern=root"
(cf. *ʔihqʰoʔ* "root")

FERN, SWORD

Polystichum munitum. Aspidiaceae

Coarse evergreen fern with many fronds growing in heavy clumps, 24″–56″ tall. Stalk: stout, 4″–12″ long, with large lanceolate chestnut-brown scales. Blades: lanceolate, dark shiny green above, paler beneath, 12″–24″ long, 3½″–7″ wide; pinnate leaflets densely and evenly placed, numerous, narrow-lanceolate, with short bristle-tipped teeth; larger pointed tooth on the lower edge near the stalk. Root: strong, woody, very scaly rhizome.

Common in damp woods of redwood forest and Douglas fir forest.

šamóʔo·da fish=fern" (cf. *ʔahša* "fish")

Tech. The fronds were used to line an earth baking-oven or to line the sand leaching-basin.

G.S. Year-round

FIDDLENECK, PURPLE

Phacelia californica. Waterleaf Family

Perennial plant 8″-32″ tall, fuzzy. Leaves: greenish; edge entire or with 5-7 pinnate lobes; 2″-5″ long. Flowers: in dense clustered panicles which are curled under; each flower bell-shaped, lavender, ¼″ long.

Rocky bluffs and canyons near the coast in coastal scrub, and chaparral.

tʰúnkuhtu (lit. ? (cf. *kuhtu* "vagina"))

Med. The fresh leaves were crushed and the juice was rubbed on cold sores and impetigo.

G.S. When flowering, April-July

FIG, SEA; ICE PLANT

Mesembryanthemum chilense. Ice Plant Family

Low succulent herb with perennial stems 1 yard or so long forming extensive mats. Leaves: opposite, 3-sided, 1″-2″ long. Singular flowers, 1 growing on the end of the stem. Flower: 1″-2″ across with fringe-like pink petals. Fruit: fleshy capsule.

Sand dunes and bluffs along the coastal strand.

qʰaćáyʔća

Fd. The fruit was eaten raw (Gifford 1967:13).

G.S. Summer

FIGWORT; BEE PLANT

Scrophularia californica. Figwort Family

Stems: coarse; 4-angled; finely pubescent; 20″-70″ tall. Leaves: opposite; triangular-ovate to ovate shaped; pointed tip; toothed edge; 1″-4″ long; ¾″-3″ wide; petiole ½″-2″ long. Flower cluster: panicles 4″-16″ long; 2″-4″ wide; with spreading branches. Flower: globular to elliptic shaped tube with two lobes on the upper lip and the wide lower lobe turned under; red-brown to maroon colored; ⅜″-⅝″ long.

Common usually in damp places, especially brushy thickets in the coastal scrub and redwood forest.

haqaṭá qʰale "hornet plant"
(or)
ṭule qʰále "hummingbird plant"

Med. The fresh leaves were warmed and used as a poultice to draw a boil to a head. The leaves were used also to draw the pus out of a burst boil.

G.S. February-July

FIR, DOUGLAS

Pseudotsuga Menziesii. Pine Family

Forest tree 70′-250′ high with a narrow or broad pyramidal crown, slender crowded branches with long drooping lateral branches. Bark: thick and deeply furrowed with dark ridges. Leaves: linear and flat, green, ½″-1½″ long, scattered all along the twigs. Male catkins: yellow with red tinge. Female cone: cinnamon to red-brown; 1¾″-3½″ long; oval; 1¼″-1¾″ thick; each cone scale has a spear-like bract growing from its apex.

Moist mountain slopes, in redwood forest and Douglas fir forest, mixed evergreen forest.

qʰawam?

Tech. The pitch *(qʰawam? qahwe·* "Douglas=fir pitch") can be used like glue. The wood is used for firewood *(cínhay).*

G.S. Year-round

GINGER, WILD (ROUND LEAF)

Asarum caudatum. Brithwort Family

Flowers and leaves rise directly from fragrant, creeping rootstock. Leaves: 2"-5" wide, mottled, heart-shaped, on petioles 3"-7" long. Flowers: close to ground, on short stalk; sepals to 1¼" long, brownish purple, spreading, hairy, tips long and tapered.

Grows among redwood trees, moist damp areas; near water and always in a shady area.

mo?bó· qʰale "swelling plant"
(or)
šuhkúl šihpʰa "heart leaf"

Med. The fresh leaves are warmed and used as a poultice to bring boils to a head. Poultice was used for toothaches as well. The leaves can also be boiled to make a strong tea used to wash sores.

G.S. Year-round

GOOSEBERRY

Ribes californicum. Saxifrage Family

Compact, intricately branched shrub, 24"-56" tall, the young twigs usually without bristles, but having up to 3 spines at the nodes. Leaves: thin, roundish, ½"-1¼" wide, with 3-5 clefts. Flowers: solitary; greenish, dull white, or purple; ovary bristly; free part of flower tube about ⅛" long. Berry: round, ⅜"-½" diameter, reddish, bristly.

Open slopes and rocky canyons in redwood forest, chaparral, mixed evergreen forest, or woodland.

buṭaqá ʔilumʔ "bear gooseberry"

Fd. The berries *(ʔilumʔ)* were put into a winnowing basket *(šamʔ)* with some hot hardwood coals from the fire and shaken back and forth to singe off the bristles. The berry could then be eaten whole. Nowadays people usually break the skin of the berry and eat just the inside.

G.S. Late July-Early August

GRAPE, WILD

Vitis californica. Grape Family

Woody vined plant that climbs by tendrils. The stems have shreddy bark. Leaves: alternate, roundish, 3-lobed, 2"-6" broad, pubescent, usually with short teeth on the margin. Petiole: 1"-5" long. Flowers: small, 5-petaled, greenish-yellow, on a panicle 2"-6" long. Berries: round ¼"-½" wide, purplish and covered with white tinge.

Stream banks and canyons in forest and woods.

šucumʔ

Fd. The berries were eaten fresh. Modern grapes are called *ʔú·was* (<Sp).

Tech. The vine makes a very strong cord which was used to tie bundles and for lashing. It is also used to make the hoop on a baby basket.

G.S. Berries: Late Summer
Vine: Year-round

GRASS, BEAR

Xerophyllum tenax. Lily Family

Leaves: basal; densely clustered; 20″-40″ long; ⅛″-¼″ wide; rigid, linear, and grass-like. Flowers: dense raceme 4″-24″ long of white or cream colored flowers; on a central stem 12″-72″ high. Seed capsule: sharp-pointed ¼″-½″ long.

Open dry slopes and ridges; mixed evergreen forest. Montane coniferous forest; coastal ranges.

šućum ʔ qáʔdi "grape grass"

Med. The roots were washed and rubbed to make a lather to wash sores. (Oswalt, linguistic files).

G.S. Year-round

GRASS, FOXTAIL; BARLEY

Hordeum. Grass Family

Annual or perennial, low or rather tall grasses, with flat blades. Seed spikes are dense, cylindrical, and bristly, growing at the end of the stems.

Plains and open ground. Introduced from Europe.

na?ą́a qá?di "seed=spike grass"

Misc. The bristly seed can be dangerous because it can work its way into the mouth, nose, ears, or eyes of animals or people where it causes irritation. The seeds of two species of foxtail were sometimes used in pinole. These are *Hordeum murinum* and *Hordeum vulgare* (see Oat, Wild).

G.S. Late Spring

GRASS, NIT

Gastridium vantricosum. Grass Family

An annual grass with flat spike-like blades, ¾"-5" long. Flower panicle is 1"-3" long, loose, pale-green and shiny, on stems 4"-20" tall; dense with many one-flowered spikelets ⅛"-¼" long that are swollen at the base with a small plump seed.

Weed on dry open ground. Introduced from Europe.

ɬa?šu qá?di "nit grass"

Misc. The seed pods look like nits. It pops like a nit when squeezed between your fingernail.

GRASS, VELVET

Holcus lanatus. Grass Family

A grayish, velvety grass with flat blades 12″-40″ tall, ⅛″-⅜″ wide. Flower panicle 3″-6″ long, pale, delicately branched, tinged with purple.

Spread from cultivation to meadows and fields. Native of Europe.

qa?di boi (lit. "grass soft")

GRASS, WHEAT

Triticum aestivum. Grass Family

Annual grass with flat blades ⅜″-¾″ wide, 24″-40″ tall. Thick spikes 2″-5″ long with 2-5 flowered seed spikelets ⅛″-¼″ long placed flat at the joint of each axis.

Commonly cultivated, often escaping in waste places. Native of Old World.

šinícca qa?di "wheat grass" (<Ru *pšenica)*)

Fd. The seed was used in mush *(ká·ša* < Ru *kaša)* and to make flour *(wihṭha)* for modern bread *(cuhni·).* It was first introduced to the Kashaya area by the Russians at Fort Ross.

G.S. Late Spring-Early Summer

GUM PLANT

Grindelia stricta venulosa. Sunflower Family

Herbaceous perennial 12"-16" tall if erect, 3' across if lying down. Stem: usually smooth, whitish or yellowish. Leaves: thick and sticky or gummy-feeling, spatulate shaped and rounded at the tip. Flower: heads 1"-1¾" across, very resinous, especially the new buds that have white sticky juice. The flowers are daisy-like with bright yellow petals.

Coastal salt marshes and seaside bluffs.

q'aqáhwe· "water=pitch"

Tech. The sticky sap *(qahwe·)* was used like glue.

G.S. Spring-Early Summer

HAZEL, CALIFORNIA

Corylus cornuta californica. Birch Family

Deciduous spreading shrub or small tree 6'-15' high with smooth bark. Leaves: obovate to roundish; 1½"-4" long; doubly serrate; sometimes 3-lobed; pale beneath, and velvety on top. Nuts: brown; ½"-1" long; surrounded by fringed tube with short stiff hairs.

Along streams in cool canyons or on moist slopes.

mi?díš q'ale "nut tree"
(or)
?aca? mi?diš q'ale "Indian nut tree"

Fd. Nuts *(mi?diš)* eaten fresh; were dried and stored for Winter.

Tech. Hazel switches are used to weave twined baskets such as large burden baskets *(buhqʰal)*, surf fish baskets *(ʔahša buhqʰal* "fish burden=basket"), and other open-work baskets such as fish traps *(haqo·)*. They are also used as the foundation in coiled baskets. Arrows *(hiʃu·)* were made from their straight branches.

G.S. Nuts: Late Summer-Early Fall
Basket Material: After leaves drop in Fall.

HEMP, INDIAN

Apocynum cannabinum. Dogbane Family

Perennial herb with horizontal rootstocks and upright branching stems 12"-24" tall with tough fibers. Leaves: opposite; lower leaves have no stem; lance-ovate shaped, 1½"-4" long; light greenish-yellow. Flower: greenish to whitish, cylindric to urn-shaped, ⅛" long.

Stream and river banks in many plant communities.

mahša

HONEYSUCKLE, CALIFORNIA

Lonicera hispidula var. *vacillans.* Honeysuckle Family

Climbing shrub 6'-20' high, stems smooth ¼"-½" wide. Leaves: oblong; green above, white galucous below; upper leaves

joined together around stem with no petiole, the lower short-petioled. Flowers: pink and whorled forming spikes or panicles. Fruit: red, round, ¼".

Along streams and on wooded slopes.

pí·pa q'ale "pipe plant" *(pí·pa* "pipe" <Sp)

Tech. The hollow stems were used for pipe stems (clay elbow pipes). Ashes of the burned wood were made into paste for tattooing.

G.S. Summer-Fall

(No common name.)

Horkelia californica. Rose Family

Stems stout, erect or spreading, leafy, 8"-30" long. Soft hairs over all the plant. Pleasantly aromatic. Leaves: 4"-8" long, often with long stems; leaflets 5-8 pairs, ½"-1¾" long, roundish to obovate, doubly toothed. Flowers: in a flat-topped or convex panicled clusters; flower cup-shaped, ¼"-⅜" wide, ⅛"-¼" deep, rust to purplish.

Grassy slopes near the coast.

balá· wenu q'ale "blood=medicine plant"

Med. The root of the plant was boiled to make a tea which was used as a blood purifier.

G.S. Late Summer

HORSETAIL, COMMON

Equisetum arvense. Horsetail Family

A rush-like plant 4″-10″ high with jointed stems. Stems: fertile stems flesh-colored and have no branches, 2″-10″ tall, with a slender oval spike at the tip 1″-1½″ long, each joint of stem has sheaths ½″-¾″ long with 8-12 brownish teeth at the top of each, die soon after pollination; sterile stems green, 1′-1½′ tall, with sheaths ending in about 12 brown teeth and with numerous needle-like branches in dense whorls from the nodes.

Wet soil in swamps, hillsides, and other wet places.

šima·yu

Med. The plant is boiled and made into a tea for washing itching or open sores.

G.S. Early Spring-Late Fall

HORSETAIL, GIANT

Equisetum Telmateia var. *Braunii.* Horsetail Family

Rush-like plant 2′-7′ tall with jointed stems. Stems: fertile stems are whitish or brownish and have no branches, 8″-24″ tall, each joint of stem has sheaths 1″-1¾″ long with 20-30 teeth, with an oval shaped spike at the top 2″-3″ long; sterile stems 2′-7′ tall, greenish, with numerous branches growing from the nodes 3″-6″ long and rough ridges.

Rich, moist ravines, swampy places along streams.

šima·yu

Med. The stem is boiled into a tea and drunk for menstrual cramps.

Tech. The leafless fertile stems were used as a sandpaper in smoothing arrow shafts, drill shafts, etc.

Misc. The horsetail plant was used as binding to fasten feathers onto the coat of a *walé·pu*

> The one I saw wore something like a coat. . . . made of all different kinds of feathers: horned owl feathers, screech owl feathers, crow feathers, and some other kinds. They were fastened onto the horsetail plant ("Description of a Walepu II," Oswalt 1964:190-191).

G.S Early Spring-Late Fall

HORSETAIL, RIVER

Equisetum Funstoni. Horsetail Family

Rush-like plant 1½'-6' tall with jointed slender rough stems. The margin of each sheath on the jointed stem has a narrow black band. Fertile stems have a whorl of small sterile branches at the base. Slender cone at top ½"-1¼" long, blunt.

Common in moist places, often in partial shade.

šima·yu

Med. The whole plant was boiled into a tea and taken internally for kidney trouble and associated back trouble.

G.S. Early Spring-Late Fall

HOUND'S TONGUE

Cynoglossum grande. Borage Family

Leaves: basal, ovate, smooth or slightly hairy, 3″-8″ long, with long stems. Flowers: blue-purple, ¼″-⅜″ long, arranged in a panicle on top of a tall stem 1′-3′ high. Root: heavy root that doesn't die.

Wooded canyons and dry shaded slopes.

duwi šíma·ta "coyote ear" (cf. *šima* "ear")

HUCKLEBERRY (BLACK)

Vaccinium ovatum. Heath Family

The shrubs grow 3′-8′ high. Leaves: ovate to oblong lanceolate; leathery, smooth and shining ½″-1½″ long. Flowers: ⅛″-⅜″ long; white to pink; bell-shaped; in axillary racemes. Berries: round, ¼″-½″; black.

Dry slopes and canyons in redwood and mixed evergreen forests, below 2500′.

ṡu·ʔnú·ʔnu qʰale "huckleberry plant"

Fd. Berries *ṡu·ʔnú·ʔnu)* were eaten both fresh and dried. Today the berries are eaten fresh and are used for dumplings, pies, puddings, and toppings.

Med. The leaves were boiled to make a tea which was drunk as a medication for diabetes.

Misc. The reservation which is now referred to as Kashia used to be called *ṡu·ʔnu·ʔnu šina!* "Huckleberry Heights". This was because of the abundance of huckleberries in the area.

G.S. Berries: Late Summer-Early Fall
Leaves: Year-round

HUCKLEBERRY, RED; WILD CURRANT

Vaccinium parvifolium. Heath Family

Erect and somewhat straggling shrub, 3′-9′ tall. Branches: green and sharply angled. Leaves: ovate to oblong, entire, deciduous, ⅜″-1¼″ long. Flowers: greenish or whitish, in ones or twos; flower rounded, ¼″ long. Fruit: bright red, round, ¼″-⅜″, pleasant flavor.

Deep woods and moist places in redwood forest and mixed evergreen forest.

sabiło·yi? "penis=peels=itself"

Fd. This berry is eaten fresh.

G.S. Summer

INSIDE-OUT FLOWER; REDWOOD IVY

Vancouveria planipetala. Barberry Family

Plant 6″-20″ high. Leaves; basal, biternate compound; with 5-leaf divisions. Leaflets; ovate; 1½″ long; 3-lobed; dark glossy green. Flowers: white or lavender tinged; ¼″ long, delicate.

Shady woods in the redwood forest, 100′-2000′ elevations.

šihpʰa šálu? qʰale "leaf glisten plant"

IRIS, WILD

Iris Douglasiana and other *Iris sp.* Iris Family

A perennial herb 1′-2′ high from a stout creeping root. Leaves; sword-like, ¼″-1″ wide and 1′-2′ high with red-brown sheath at the base. Flower: stalk 6″-30″ tall with 1-4 side branches, each usually 1-3 flowered. Flowers: cream-colored to lavendar or purple or blue, petals oblanceolate 2″-3″ long. Capsule: oblong, sharply angled, 1¾″-2″ long.

Abundant on grassy slopes and open places along the coastal prairie and in woods.

šiwita

Misc. The flowers are used in dance wreaths for the Strawberry Festival.

G.S. Spring

LILY, HABENARIA

Habenaria unalascensis and *H. elegans.*
Rein Orchid. Orchid Family

Perennial herb with fleshy tuber-like root. Leaves: 2-4, basal, broadly lance-shaped 3″-8″ long, ½″-2″ wide, stemless. Flowers

are densely arranged in a spike on top of a stiff stem 10″-24″ tall (to 40″ if *H. unalascensis).* Flowers: greenish-white, ¼″ long.

Dry to moist soil on flats and slopes in chaparral, grassland, oak woodland, mixed evergreen forest, or coastal scrub.

koyó?yo

Fd. The bulb *(hi?bu)* was baked and eaten in the same manner as the bulb of Ithuriel's Spear.

G.S. Spring-Summer

LILY, MARIPOSA

Calochortus Vestae. Lily Family

Leaves: linear, 4″-8″ long, basal. Flowers: 1-3; erect; bell-shaped; each 1″-2″ across with 3 petals colored white to purplish, each petal penciled with red or purple with a red-brown blotch in the middle surrounded by a pale yellow zone; growing on slender erect stems 12″-20″ tall. Base of stem enlarged, forming a bulb ½″-1″ across, covered with brown papery skin. Seed capsule: linear, angled, erect.

Heavy clay soils in mixed evergreen forest areas.

sikʰoló?lo

Fd. The bulb *(hi?bu)* was baked and eaten in the same manner as the bulb of Ithuriel's Spear.

G.S. May-July

LILY, YELLOW MARIPOSA

Calochortus luteus. Lily Family

Basal leaves linear, 4"-8" long, ⅛"-¼" wide. Flowers: 1-4, erect, bell-shaped; each 1"-2" across with 3 petals colored deep yellow, the petals usually penciled below with red-brown lines and often with a red-brown blotch in the middle; growing on slender erect stems 4"-20" tall. Base of stem enlarged forming a bulb ½"-1½" across, covered with brown papery skin. Seed capsule: lance-linear, angled, erect, 1½"-2½" long.

Heavy soils in open places in grassland, woodland, or mixed evergreen forest.

sikʰoló²lo

Fd. The bulb *(hi²bu)* was baked and eaten in the same manner as the bulb of Ithuriel's Spear.

G.S. April-June

LOVAGE (HUMMINGBIRD'S ANGELICA)

Ligusticum apiifolium. Carrot Family

Plant 12"-60" high. Leaf blades: 4"-12" long, ternate-pinnate. Leaflets: ovate to oblong 1½"-2" long, coarsely serrated; petioles 4"-12" long. Flower: a white compound umbel, 2"-8" across.

Meadows and shaded banks on the coastal prairie, redwood forest, evergreen forest, and oak woodland. Below 2500'.

tule bá²ćowa "hummingbird angelica"

Med. The root was boiled and the liquid drunk for hemorrhage in the lungs, for the beginning of tuberculosis, or anemia.

G.S. June-July

LUPINE, BEACH

Lupinus arboreus. Pea Family

Shrubby plant, 3′-6′ tall with numerous short branches and fuzzy or silky herbage. Leaves: palmately compound with 5-12 oblanceolate leaflets ¾"-2½" wide; petioles ¾"-2½" long. Flowers: in racemes 4"-12" long on stems 1½"-4" long; each flower ½"-¾" long; yellow, lilac to blue, or mixed; typical pea flower. Pods: brown, hairy, 1½"-2¾" long. Roots; long slender secondary roots.

Sandy ground on coastal strand and coastal scrub.

qálqaśa

Tech. Root fibers were used to make string for fish nets *(waya²)*, deer and rabbit nets *(²iye²)*, gill nets *(yémhṭʰe)*, carrying nets *(cʰi·lan)*, and other strong nets. The root is called *qalśahqʰo²*. The string made from the root is called *sulema²*.

Misc. The flowers are used in wreaths for the Flower Dance which is performed at the Strawberry Festival in May. Other kinds of lupine also grow in the Kashaya area and are used in the dance wreaths and have the same Kashaya name as Beach Lupine, but Beach Lupine was the only species used to make string. These other species include: *Lupinus affinis; Lupinus albifrons; Lupinus densiflorus; Lupinus luteolous; Lupinus nanus var. latifolius; Lupinus polyphyllus; Lupinus succulentus; Lupinus variicolor.*

G.S. Roots: Fall
Flowers: April-May

LUPINE, FALSE

Thermopsis macrophylla. Pea Family

A plant with stout clustered stems, 12″-32″ high, the whole plant having short soft hairs. Leaves: palmately 3-foliate, each leaflet obovate, or oblanceolate-shaped, 1½″-2¾″ long. Flowers: in racemes at the end of stems, 6″-10″ long; flower yellow, ⅜″-¾″ long, with a rounded banner above, 2 oblong wings below and a straight keel on the bottom (typical pea family flower). Seed pod: flat with two seams, fuzzy, erect, 2″-3″ long, few seeds.

Open places mixed evergreen forest, and woodlands.

ʔama·la šíma "rabbit ear"

Med. The leaves were boiled and the cooled liquid was used as an eyewash for sore eyes and vision difficulty (Gifford 1967:13). The leaves, or root, and bark were made into a tea to slow down menstrual flow.

G.S. Year-round

MADRONE

Arbutus Menziesii. Heath Family

Widely branched evergreen tree 15'-120' high. Bark: papery red-brown strips freely peel off in early summer leaving a polished reddish or brownish surface; bark on very old trunks dark and cracked. Leaves; thick; dark-green above, paler beneath; smooth; elliptic to ovate shaped; smooth or serrated edge; 2"-5" long; stem ½"-1" long. Flowers: in panicles at the end of branches 2½"-6" long; each flower urn-shaped; white to pinkish, ¼"-⅜" long; sweet scented. Berry: red to orange; round; wrinkled ⅜"-½".

Wooded slopes and canyons in redwood forest, mixed evergreen forest, fir forest, and oak woodland.

ḳaba?

Fd. The berries were eaten fresh or roasted, or parched and stored for the winter.

Med. The bark is boiled until the tea turns dark and the liquid is used to wash sores (e.g., impetigo) except for poison oak sores. Wash the scab off the sore. This is also good to gargle with for sore throat and strep throat. Lengthwise strips of bark 1" wide by about 6" long are shaved from the trunk.

Tech. The wood is burned for firewood but is not particularly sought (Gifford, 1967:14).

Misc. The leaves are used for paper-dolls for the younger children to play with (cf. Clavaud 1977).

The flowers on the madrone tree are used for love charm poisoning.

The madrone bark was boiled to make a strong tea, cooled, and used by women to rinse their face. The tannin in the bark acts as an astringent to close the pores and make the skin soft and pretty.

G.S. Bark: Year-round
Leaves: When the leaves turn color starting in June until the end of Summer.
Flowers: March-May
Fruit: Late Fall-Mid Winter; after the first frosts when the berries turn deep red in color.

MANZANITA, EASTWOOD

Arctostaphylos glandulosa. Heath Family

Shrub 2′-12′ high, with many branches coming from a spreading root crown. Wood: red and peely. Leaves: ornate to elliptic, rounded at the base, dark or yellowish-green, smooth and non-fuzzy, 1″-1¾″ long. Flowers: bell-shaped in small compact clusters, white or pinkish. Ovary hairy. Berry: ¼″; round and smooth. Seeds: smaller than most other manzanitas.

Dry, rocky, brushy or grassy hillsides.

qaye qʰále "manzanita plant"

Fd. The berries *(bahqay)* are first put into a pot and boiling water is poured over them to kill the worms. The berries are then dried, pounded and stored for later use. They can be made into pinole, cakes, or mixed with water and eaten.

Med. The bark is boiled into a tea and drunk for use in curing diarrhea. It will cure bleeding diarrhea.

Tech. The hard wood is favored for making tools such as awl handles. You must be careful to choose a piece with no joints or it will bend as it dries.

Misc. At the time of creation, Coyote threw a dried manzanita bush *(háyhcʰa* "dead wood") into the ocean to make a swordfish (Oswalt 1964:39). Manzanita wood was put on

the fire at dances and ceremonials because it makes a bright light to see by.

G.S. Berries: Early Summer (May-July)
Bark: Year-round
Wood: for tools: Spring-Summer

MANZANITA, HAIRY

Arctostaphylos columbiana. Heath Family

Erect bush with many crooked branches; 3′-10′ high; without a burl at the base. Bark: smooth; dark red-brown; outer bark papery and peels off. Branchlets densely covered with bristly hairs. Leaves: ovate to long; blunt tip; petioles short. Flowers: in short, dense panicles at the ends of branches; each flower on a short stem ⅛" long, white or with some pink color, ¼" long, urn-shaped with rounded lobes curved back. Fruit: round with flattened ends, ¼"-½", bright red.

Dry, rocky or clay slopes; mixed evergreen forest, and Douglas fir forest.

bahqá· q'ale "manzanita-berry plant"

Med. The bark is boiled into a tea for use in checking diarrhea.

Tech. The hard wood is favored for making tools such as awl handles.

Misc. Manzanita wood was put on the fire at dances and ceremonials because it makes a bright light to see by.

G.S. Bark: Year-round
Wood: for tools: Spring-Summer

MAPLE, BIG LEAF

Acer macrophyllum. Maple Family

Round topped tree 30′-95′ high with coarse greenish to brownish twigs. Leaves: roundish in outline 4″-10″ broad, palmately parted into 3-5 irregularly toothed and deeply cut lobes; petioles 2″-5″ long. Sepals and petals of flower ¼″ long and greenish. Seeds: in a hairy pod with 2 wings; 1″-2″ long, tawny colored.

Common on stream banks and in canyons.

qalam?

Tech. The wood was used to make staves *(mulay?)* for a dice-type gambling game. Six staves (each about 1′ long) were used in the game. A straight piece of branch about 1½″ thick was split down the middle. The flat side of the stave was plain; the curved side was carved with a design.

Misc. *qalam?* is also the name given to the fig.

G.S. In Winter when the sap is down.

MILKWEED

Asclepias speciosa; Asclepias eriocarpa. Milkweed Family

Stout, herbaceous, softly hairy plant, 20″-48″ tall in *A. speciosa* and 16″-36″ tall in *A. eriocarpa.* Leaves: opposite, oval to oblong shaped with a pointed tip and rounded base and very short stem, 3″-6″ long in *A. speciosa;* in whorls of 3 or 4, oblong shaped with rounded tip and squared base, 2½″-8″ in *A. eriocarpa.* Flowers: grow in axils or on ends of stems; rose-purple petals ⅜″ long with pinkish "hood" in *A. speciosa;* cream-colored petals 3/16″ long with cream or purplish "hood" in *A. eriocarpa.*

A. speciosa: dry gravelly and stony places in mixed evergreen forest. *A. eriocarpa:* dry barren places in many plant communities.

ši?do q'ále "milk plant"

Tech. Two-ply string was made from the fibers of the stem (Gifford 1967:23). The fibers were also shredded to make a woman's skirt (Kniffen 1940:387).

G.S. Summer

MILKWEED

Euphoria crenulata. Spurge Family

Annual plant with one or more stems, simple or branched, 8"-24" tall. Leaves: cauline, obovate to spatulate, entire, ⅝"-1½" long, usually attached directly to the stem with no petiole; leaves at base of flower in two's or three's, triangular-shaped ¼"-¾" long. Flowers: grow in a cup-shaped cluster resembling a flower with several united lobes, ⅛" high, crescent-shaped glands. Seeds: ash-colored, oblong-ovoid, ⅛". The plant exudes a bitter milky juice when broken.

Common in dry places.

ši?do q'ále "milk plant"

MISTLETOE

Phoradendron flavescens var. villosum. Mistletoe Family

Parasitic woody plant with branched brittle stems, 12"-24" high. Leaves: narrow-obovate to round; ½"-1½" long; covered with short soft hairs; thick. Flower spikes about ½"-2" long with 20-30 male flowers and 6-12 female flowers; greenish and small. Fruit: white or tinged with pink, round, ¼", sticky to touch and gelatin-like.

On Oak trees.

qop'ina

Med. The leaves can be boiled into a tea for delayed menstruation. It is not recommended to use this tea without the guidance of a doctor as it can cause sterility if not used properly.

G.S. Year-round

MONKEY FLOWER, STICKY; BUSH MONKEY FLOWER

Mimulus aurantiacus. Figwort Family

Erect, profusely branched shrub 2'-4' tall. Stems, branches and leaves can be fuzzy or smooth, but sticky. Leaves: 1"-2" long, oblong-lanceolate or oblong-elliptic; dark-green, veiny above; edges usually serrated, often curled under. Flower: 1½"-1¾" long, tubular-shaped, enlarging at the top to ¾"-1¼" across with two upper lobes and three lower lobes; deep orange to yellow-orange.

Rocky places in woodland, mixed evergreen forest, and brushy hillsides.

hu ʔú· wenu qʰale "eye medicine plant"

Med. Flower, stem and leaves boiled and then strained and used as an eyewash for sore eyes.

G.S. May-June

MORNING-GLORY; BINDWEED

Convolvulus arvensis. Morning-glory Family

Perennial herb with twining stems 12"–40" long; smooth to downy. Leaves: ¾"–1½" long; arrowhead-shaped or ovate, with rounded tip. Flower: solitary; growing from the axil; funnel-to-bell shaped with 5 lobes, ¾"–1" long; white to pinkish.

Grows in orchards, fields, empty lots, etc. Naturalized from Eurasia.

daɬiɬím qʰale "tangled plant"

Med. Stem with leaves boiled to make a tea which was drunk to stop excessive menstruation.

G.S. June-July

MOUNTAIN BALM; YERBA SANTA

Eriodictyon californicum. Waterleaf Family

Aromatic shrub 20"-40" tall with shredded bark and open weedy growth from woody underground rootstocks. Leaves: alternate; oblong or lance-shaped with entire to serrated edges; 2"-6" long; smooth and sticky above, soft and veiny beneath. Flowers: branched panicles at the end of the stems bear many white to lavender tube-shaped flowers, each ⅜"-¾" long.

Dry rocky slopes and ridges.

du·ʔćánʔ qʰale "sticky plant"

Med. Leaves are boiled to make a tea which is used as a cough medicine and a blood purifier. This tea will bring down the fever of a cold. Leaves are also boiled to make a wash for sores. The leaves are gathered before the plant flowers and can be dried and stored. Don't pick the early leaf sprouts for they won't be strong.

G.S. Summer

MULE EARS

Wyethia glabra. Sunflower Family

Stems 4"-24" high. Basal leaves oblong-lanceolate to eilipticovate, 12"-20" long, 4"-5" wide, entire. Cauline leaves similar but smaller. Flower: solitary head 1½"-2½" wide, ray flowers yellow; on stems 4"-24" high. Seed: ¼"-½" long, nutty, covered with thick papery shell.

Shady brushy slopes in mixed evergreen forest and chaparral.

cʰalam?

Fd. The seeds were used in pinole or eaten fresh (see Oat, Wild).

G.S. Early-Mid Summer

MULLEIN, TURKEY; DOVEWEED

Eremocarpus setigerus. Spurge Family

Low, broad, gray, heavily-scented plant with stems branched from the base, forming dense rounded masses 1″-8″ high and 2″-30″ across. Leaves: ovate to round ½″-2½″ long. Male flowers in flat-topped or curved clusters; female flowers one to three growing in lower axils; flowers ⅛″ long, grayish, have no petals.

Common in dry open places, in sandy or heavy soil.

ʔahša páši· "fish poison"

Med. The root was mashed, boiled and the solution was drunk for treating bleeding diarrhea. Although the Kashaya Pomo knew of the plant's use as a fish poison by Valley Indians, they did not use it as a poison themselves (Gifford 1967:13-14).

G.S. Late Spring, Summer, Early Fall

MUSTARD, WILD

Brassica. Mustard Family

Erect branched herbs 12″-48″ tall. Lower leaves petioled (has stem); 4″-8″ long, roundish to oblong, sometimes lobed; toothed. Upper leaves lanceolate or linear, smaller. Flowers: elongated racemes; ¼″-½″ long, yellow. Seed: round 1/16″ long, growing in a stout pea-like pod ¾″-2″ long.

Common weed on dry grassy slopes, in grain fields, and waste places. Natives of Europe.

kulucícca (<Ru *gorčica*)

Fd. Flowers and young leaves can be eaten raw or cooked. After having been washed, the leaves were boiled and then fried.

G.S. Flowers: Spring
Leaves: Picked before flowers come to a bloom. Late Winter-Early Spring

MYRTLE, WAX

Myrica californica. Wax-Myrtle Family

Shrub 6′-12′ tall, the branches slender; bark gray or light-brown. Leaves: oblong to oblanceolate, dark-green, glossy, 2″-4½″ long; entire or slightly serrated edge. Male catkins ¼″-¾″ long in lower axils; female catkins ¼″-½″ long in upper axils.

Canyons and moist slopes in the redwood forest and along the coast.

śapʰa qʰále

NETTLE, BULL

Stachys bullata. Mint Family

Stem: square, slender, simple or branched, 10"-24" high. Leaves: ovate to oblong-ovate shaped, serrated edge, 1"-7" long; on petioles (stems) up to 2¼" long. Flowers: dense or loose six-flowered whorls at the end of branches or from the upper axils; purple flower ¼"-⅜" long, tube-shaped with lobed lip.

Dryish slopes and canyons in many environments.

šimašúkʰle "ear"=?="plant" (< Ps)

Med. Leaves are heated and then used as a poultice on boils to bring them to a head.

G.S. April-September

NETTLE, STINGING

Urtica Lyallii and *Urtica californica.* Nettle Family

Stems: 3'-6' tall, smooth with sparse bristles. Leaves: ovate, 1½"-6" long, coarsely toothed with a long point on the tip, green and almost smooth on top, somewhat pubescent beneath. Flower: small, greenish, in flat-topped to convex, elongated clusters. Stinging hairs cover the entire plant. *Urtica californica* is more pubescent and lacks the long point on the tip.

Moist places and wet brushy thickets near the coast.

ʔohomʔ (cf. *ʔoho* "fire")

Med. This was used as a counterirritant for rheumatism and other such pains. The skin was struck with the nettle which made the skin warm and red.

G.S. In Spring and Summer it is freshest but some stalks can usually be found most of the year.

NUT GRASS; CHUFA

Cyperus esculentus. Sedge Family

A perennial grass-like plant with numerous flat blades 6"-20" long, 1/8"-3/8" wide. Flower part (inflorescence: compound umbel with 5-10 rays bearing chestnut-brown linear winged spikelets 1/4"-1 1/4" long; inflorescence subtended by 2-6 blades to 7" long. Slender scaly rootstocks bear edible tubers.

Widely scattered in cultivated fields and wet places at low elevations.

ʔacʰim'

Fd. The tubers on the rootstock have a crisp nutty flavor and can be eaten raw, or can be baked or boiled like potatoes.

G.S. Summer

NUTMEG, WILD

Torreya californica. Yew Family

Evergreen tree 15'-100' tall with slender spreading branches. Leaves: stiff, dark-green, sharply pointed needles 1"-2 1/2" long, 1/16" wide. Fruit: oval, 1"-1 1/4" long, green with purplish markings (looks like a peppernut).

Cool shaded slopes and canyons, in mixed evergreen and fir and redwood forests.

*q*ʰ*abéhe q*ʰ*ale* "water=peppernut tree"

Med. The nut was cracked and soaked in cold water overnight; then boiled into a strong tea which was drunk as a remedy for tuberculosis.

G.S. Summer

OAK, BLACK

Quercus Kelloggii. Beech Family

Graceful tree with a broad rounded crown, 30′-80′ tall; trunk bark dark, checked into small plates. Leaves: deeply parted into about 3 lobes on each side ending in 1-3 bristle tipped teeth; lustrous and green above, lighter beneath; 4″-10″ long, 2½″-6″ wide. Acorn cup: large, ½″-1″ deep, ¾″-1″ broad, with thin scales. Acorn: oblong; rounded at tip; deeply set in the cup; 1″-1¼″ long, ¾″ thick; covered with fine fuzz when young; mature second season.

Mountain slopes and gravelly valleys in mixed evergreen forest and oak woodland.

*yuhši· q*ʰ*ale* "black=oak=acorn tree"

Fd. The acorn was gathered and prepared in much the same way as the tan oak acorn. The acorn is called *yuhšiy*, "black oak acorn" or *bi*ʔ*du*, the general term for any acorn.

Misc. Round fleshy insect galls can be found on most kinds of oak. These "oak balls" *(polo·ša)* can be made into a dark hair dye.

Oak balls are also mentioned in a myth told by Essie Parrish:

> . . . Thereupon he departed for some place in the hills where he could find the biggest oak balls. Having selected one, he took it. Then he built a boat. He made a boat by scraping a cavity (in the oak ball). Having made the boat he took it off to the gravel beach. Having done so, he cried while going off . . . across the western sea . . . bobbing up and down—bobbing up and down like the ocean waves ("The Story of Scaup", Oswalt 1964:98-101).

G.S. Fall

OAK, COAST LIVE

Quercus agrifolia. Beech Family

Low, broad-headed tree 20"-70" tall; trunk bark smooth with irregular cracks. Leaves: round or sometimes ovate to oblong, with spine tipped teeth; 1"-2" or 4" long; convex. Acorn cup: ⅓"-½" deep, covering only the base of the nut. Acorn: slender, pointed, 1"-1½" long, ½"-⅔" thick; mature first autumn.

Rich valley floors, rocky hills, and steep canyon sides in soil that is not too dry.

yuʔċi qʰále "live=oak=acorn=tree"

Fd. The acorn was gathered and prepared in much the same way as the tan oak acorn. The acorn is called *yuʔċi* "live oak acorn" or *biʔdu*, the general term for any acorn.

G.S. Fall

OAK, OREGON

Quercus Garryana. Beech Family

Round-headed tree 25′-55′ tall; trunk bark white, thin, checkered into small squarish scales. Leaves: 3″-5″ long, 1½″-4½″ wide; dark-green above; rusty or pale and pubescent beneath with yellow veins; leathery texture; pinnately parted into 5-7 deep lobes. Acorn cup: very shallow ½″-¾″ broad. Acorn: bulges beyond the small cup; round to obovoid shaped; rounded at the tip; ¾″-1″ long, ⅔″-¾″ wide; polished and shiny; mature in one season.

Rich wooded mountain slopes in oak woodland and mixed evergreen forest.

wiyi qʰále "oregon=oak=acorn tree"

Fd. The acorn was gathered and prepared in much the same way as the tan oak acorn. Although it was not as favored as tan oak, black oak, or live oak acorns, it was an important supplement to the supply. The acorn is called *wiyi* "oregon oak acorn" or *biʔdu*, the general term for any acorn.

G.S. Fall

OAK, POISON

Rhus diversiloba. Sumac Family

Erect bushy shrub, 4′-8′ tall, the stems sometimes climbing tree trunks. Leaves: divided into 3 roundish to ovate leaflets which are 1″-3″ long, toothed or lobed, bright green shiny. Flower: panicles of pale flowers grow from the axils. Fruit: whitish, round, ¼″.

Low places, thickets, and wooded slopes.

ma·ʈí·ho ("cf. *ʔoho* "fire")

Tech. The ashes of burnt poison oak was made into a paste for tattooing.

Misc. According to Gifford (1967:14) a Kashaya Pomo rubbed poison oak ashes over the bodies of her children who were fathered by a White in order to make them more "Indian" in color; not a recommended procedure.

OAK, SCRUB

Quercus dumosa. Beech Family

Shrub 2′-8′ high, with rough rigid branches. Leaves: oblong to rounded with short sharply cut lobes with pointed tips; ¾"-1" long. Acorn cup: shallow, saucer-shaped, ⅓"-⅔" broad, ¼"-½" deep. Acorn: oval to cylindric, ¾"-1" long; mature in one season.

Common on dry slopes in chaparral and foothill woodland.

kaʔba qʰále

Misc. The tiny acorns are not gathered by people but are a favorite food of deer, squirrels, chipmunks, quail, and jays. The acorn is called *kaʔba* "scrub oak acorn" or *biʔdu,* the general term for any acorn.

OAK, TAN

Lithocarpus densiflora. Beech Family

Large tree 50′-150′ tall. Leaves: oblong with a pointed tip; simple parallel veins ending in the teeth of the serrated leaf margin; 2½″-4½″ long, 1″-1¾″ wide; pale; covered with fuzz beneath. Acorn cup: ¾″-1¼″ broad. Acorn: rounded or cylindric, 1″-1½″ long, covered with a wooly coat; mature second season.

Wooded slopes in redwood forest and mixed evergreen forest.

ćíšqʰale "beautiful tree"

Fd. Acorns *(biʔdu)* were dried in the sun before storing. The usual way of preparing them was as follows. The acorns were cracked open and the inner nuts put in a winnowing basket *(šamʔ)* and rubbed to remove the chaff. They were then put into a hopper mortar basket *(q̇olo·)* and pounded with a pestle *(duhkul)* to the consistency of flour *(biʔduso·* or *soqʰoʔ* "acorn grounds/flour" (cf. *ʔiso·* "grounds or particles")). This flour was sifted with a basket *(naʔsu* "sifting tray basket") and placed in a basin of clean sand and water poured over it many times to remove the bitter flavor. The water was poured over a bundle of leaves or branches that served to break the fall of the water and not splash sand into the food. The ground and leached meal was then cooked into mush or thinned with water to make soup *(tʰoʔo* "acorn mush or soup"). If pancakes or bread were to be made, the flour was ground coarser and was left soaking longer in the water. For bread *(qahléslun* "white acorn bread" <Ps), the dough was shaped into cakes that were wrapped in large leaves and baked in the coals. Red earth *(ʔipʰo·)* could be added to the dough to make a dark sweet bread *(si·lun).* Another method produced moldy acorns that were made into mush. The acorns were not dried in the sun, but were left in the house until they turned greenish with mold. The mold was rubbed off. These nuts were pounded together with whitened dry acorns and made into mush *(tʰoʔo mos* "sour mush").

Another method was to leave cracked acorns in a pool for four or five months. They were then removed from the shell and cooked without pulverizing *(qasitá·law* "soaked acorns"). They could be used for soup or mush, or eaten whole *(nono?* "soaked whole acorns").

Med. An acorn cough drop is called *ba·ṡó·yaw* (<Ps). Suck on the acorn and the tannin will soothe your cough.

Misc. Strung acorns (shell and all) can be twirled in a special way to make music *(ḳoṭo·ṭo* "acorn musical instrument").

The acorn is used in a first fruits ceremony in October after the first rainfall. The tan oak is also called the Beautiful Tree in a movie of the same name, which was produced by the University of California, Berkeley.

Acorns collected by woodpeckers are called *ṗayi.*

Tan oak bark was used by a *walé·pu* as tinder to create flashes of light:

> Walepu carried around rotten pieces of tan oak *(ċišqʰale háyhṭʰoḭ* "tan oak" "rotten wood") for making sparks. . . . and they hiss and lights flash whenever they turn around while going along—they cause lights to flash with that thing, what they say is rotten wood *(háyhṭʰo?)* ("Description of a Walepu II," Oswalt 1964:190-193).

G.S. Fall

OAK, VALLEY; MUSH OAK

Quercus lobata. Beech Family

Graceful tree 40′-125′ tall; trunk 2′-10′ diameter. Bark: thick, broken into square checks. Leaves: 3″-4″ long, 2″-3″ wide; green above, paler beneath; yellow-veined, with 3-5 lobes that are

broadened at the ends. Acorn cup: drab-brown, very warty, ½"-¾" deep. Acorn: long, conical; at first bright green-colored; mahogany or chestnut-brown when mature; 1½"-2¼" long; ½"-¾" diameter; mature in one season.

Rich loam in valleys and on slopes. Characteristic tree of well-watered valley floors.

śapʰa qʰále "valley=oak=acorn tree"

Misc. The valley oak is rare in the Kashaya area, but was widely used by inland peoples. The acorn is called *śapʰa* "valley oak acorn" or *biʔdu*, the general term for any acorn. These acorns are usually used to make mush or soup rather than bread.

OAT

Avena. Grass Family

Annual or perennial grasses 12"-32" tall. Leaf blades flat ⅛"-⅜" wide. The few-flowered panicles are narrow or some species or loose and open with horizontal branches on others. Spikelets (grass "flower") rather large, 2-3 flowered, with a bent and twisted slender bristle 1"-1½" long coming from the papery seed covering.

Waste fields and open slopes, some cultivated. Native of Old World, Europe.

muhca qʰále "grain plant"

Fd. The grain was used in pinole *(yuhu)*, a very fine dry meal. If one laughs while eating it they will choke. The seeds were gathered in June or July when the first warm inland winds come to dry the grasses, causing them to throw their seeds. The women used to watch for these winds, knowing when they come there will only be a few days to gather the

seeds before they fall to the ground. The seeds were beaten from the grass tops with a basketry seed beater into a tightly woven burden basket *(mo?o?)*. Before storing, the seeds were winnowed in a work tray *(šam?)* by rubbing until the chaff loosened. The seed was tossed into the air, the heavier grain falling back in the basket, the lighter chaff blowing away in the wind. The grain was parched by placing some in a circular coiled tray basket with some tan oak coals and shaken back and forth. Small amounts were prepared as needed. The grain was pounded in a hopper mortar until it became a fine powder. The various kinds of grains used in pinole were stored separately. Different combinations could be mixed for different flavors. Pinole could be eaten as a powdery meal or pressed into cakes. Some of the kinds of pinole include rye, wheat, barley, tarweed, wild sunflower and mule ear seeds. Pinole could be mixed with ground manzanita berries, peppernuts, or pine nuts for cakes. Sweet wild carrot seeds were used as flavoring.

Misc. The *Avena* species of oat were brought in with the Spanish-Mexican cattle around the middle 1800's. This aggressive annual grass soon took over the native perennial oat grass, probably *Danthonia californica.*

G.S. June or July (Early Summer)

ONION, WILD

Allium dichlamydeum. Amaryllis Family

Leaves: 1-3 flat narrow leaves, 1/16"-1/8" wide, 4"-12" tall, growing directly from the bulb. Flower stem (scape) 4"-12" tall, stout, with few or many flowers growing on top in a congested umbel. Flower pedicels (individual flower stems) stout, 3/8"-5/8" long.

Flower: ⅜"-¾" long, with an outer gray-brown covering. The entire plant tastes and smells like onion.

Dry heavy soils or rocky places in coastal scrub or mixed evergreen forest. Two other species of onion grow in the Kashaya area that are similar to *A. dichlamydeum*. *A. falcifolium* is 1¼"-5" tall and grows in heavy or rocky soil in openings in chaparral, woodland, and mixed evergreen forest at elevations over 500'. *A. unifolium* is 8"-24" tall and grows in moist soil in mixed evergreen forest and chaparral.

qʰaʔbáʔ

Fd. The greens and bulb may be eaten raw or cooked with other foods such as potatoes or meats for flavoring.

G.S. Spring-Early Summer

PARSNIP, COW

Heracleum lanatum. Carrot Family

Perennial plant 3'-9' tall, covered with dense short hairs. Leaf blades: round to kidney-shaped in outline; 4"-20" long and broad; ternately compound with each leaflet ovate to round 6"-16" long; serrated and sometimes lobed; leaf stems 4"-16" long. Flower cluster: loose compound umbels on stems 2"-8" long on top of 3'-9' stalk. Flowers: white. Seed: round to elliptic; flattened; winged on both edges; ⅜"-½" long.

Moist and sometimes shady places.

šošo qʰále "tube plant"

Coast variety:

buṭaqá šošo qʰale "bear tube plant"

Valley variety:

qʰalaʔ šošo qʰale "faded tube plant"

Fd. The new shoots *(wihlam?)* were peeled and eaten raw.

Med. The root is baked under ashes and then pounded with a rock until it is flat. Put the root over the aching part and tie it on with a rag overnight to relieve the pain of rheumatism, arthritis, and other muscular pains. Nowadays you can bake it in the oven. Not for use on open sores.

Tech. The hollow stems can be used to carry water.

Misc. Boys used the dry hollow stems for toy blowguns through which they shot berries or small pebbles.

Although the same species of plant, two varieties are recognized by the Kashaya. Along the coast the cow parsnip plant grows large with thick roots and is called *buṭaqá šošo qʰale* ("bear tube plant"). In the Russian River Valley the growth is more stunted and the plant is called *qʰala? šošo qʰale* ("faded tube plant").

G.S. Shoots: Early-Mid Spring
Stem: Summer
Root: August-September

PEA, SWEET

Lathyrus sp. Pea Family

Annual or perennial plants with twining, angled or winged stems, 24"-100" long, depending on the species; tendrils grow at the base of the leaf. Flowers are sometimes solitary, but occur in axillary racemes in most species; showy flower with banners, wings and keel, colored rose-purple in *L. tingitanus*, pale-lilac in *L. Torreyi*, purplish to pink or white in *L. latifolius* and *L. littoralis*, and variicolored in *L. odoratus*. Two species which are native species are *L. littorlis*, a smaller and hairy plant with 4-8 leaflets,

and *L. Torreyi,* also hairier and smaller than most with 10-16 leaflets. The other three species were brought over from European countries and have established themselves in natural areas here.

Coastal strand, open woods, garden escape.

ʔama·la mára "rabbit food"

PEA, WILD

Lotus grandiflorus. Pea Family

Perennial plant growing from a woody base, 4"-24" high, somewhat hairy. Leaves: pinnate with 7-9 leaflets. Leaflets: obovate or elliptical with a blunt tip, ¼"-¾" long. Flowers: stems longer than leaves 1½"-3" long; in umbels with two to several flowers; yellow, turning red when old, ½"-1" long. Seed pods: 1¼"-1½" long, ⅛" wide, very thin looking.

Dry forest slopes.

ʔama·la máʔa "rabbit food"

Misc. This is the native wild pea which the introduced Sweet Pea was named after.

PEPPER GRASS

Perideridia Kelloggii. Carrot Family

An herbaceous plant reaching 25"-60" in height. Several stems come from a bundle of hard fibrous roots. The leaves are 5"-10"

long, ternate, each division pinnate with narrow linear divisions 3"-4" long. The flower is an umbel of tiny white flowers. Seed: oblong, flattened, ¼" long.

Coastal prairie, mixed evergreen forest, chaparral, mixed woodland. Also dry open foothills.

sibu·ţa

Fd. The young greens *(ʔohso* "greens"; called "pepper grass" in English) can be eaten raw.

Med. The flowers are boiled into a strong tea to stop vomiting.

Tech. The roots *(sibu·ţa)* were bundled together to make a hair brush or a scrub brush *(cuċuqa?* "brush").

G.S. Greens: March-June (Spring)
Seeds: Late Summer
Flowers: July-August (Early-Mid Summer)
Roots: In Fall after plant goes to seed.

PEPPERWOOD; CALIFORNIA BAY

Umbellularia californica. Laurel Family

Tall tree with a broad crown, growing to 100' high, or in drier places grows like a shrub. Strong aromatic smell. Bark: greenish to reddish-brown. Leaves: thick, oblong to oblong-lanceolate, 1"-4" long, ½"-1¼" wide, shiny and smooth, yellowish-green; on short petioles. Flowers: in simple umbels having 6-10 flowers on each stalk; yellow-green, small. Fruit: solitary, rounded, ¾"-1" long, greenish becoming dark-purple and fleshy when ripe. Seed: light-brown shell, round, with a white hut inside.

Common in canyons and valleys in chaparral, woodland, mixed evergreen forest, redwood forest.

*behem*ʔ "peppernut=tree"

Fd. The fruit *(haí)* was dried in the sun until the thick outer covering loosened and split. *haí* is also the name for modern prune. The thick fleshy end of the husk *(qalamʔ)* was eaten raw at this stage. *qalamʔ* is also the name for modern fig. The kernel *(behe)* was roasted until dark-brown and crisp, hulled, and eaten whole. Or, hulled kernels were pounded into meal which was made into little flat cakes which were dried in the sun and stored for winter use. The kernels, either roasted whole or in the form of meal cakes, were eaten with greens, with buckeye meal, with acorn meal and mush, and with seaweed.

Med. The leaves (3-4) were boiled with a cup of water to make a dark tea and the resulting solution waa used to wash sores (at least twice a day) or taken internally to treat colds and sore throats. When drunk the solution clears up slime in the chest. This is also used for menstrual cramps and clotting and is taken internally. The leaves were also used to make a poultice for rheumatic and neuralgic pains. The earthly kind of Indian doctor would sing and hit you with little branches of pepperwood to cure a pain or headache or cold.

Misc. This plant is very sacred to the Kashaya Pomo because of its ceremonial uses. Small leafy branches are hung in homes for protection against any harm that might come into the homes. Leaves were rubbed on a man's body before he went hunting to take the body smell away.

When women are menstruating they are not allowed to touch the pepperwood or go near the gathering grounds or tree branches because this would ruin the tree or plant.

Peppernut charcoal was rubbed into a man's moustache to groom it (Gifford 1967:32).

G.S. Fruit: Mid Fall
Leaves: Year-round

PINE, BISHOP

Pinus muricata. Pine Family

Small tree 40′-80′ high with thick spreading branches, older bark thick, deeply furrowed and ridged, trunk 1′-3′ thick. Needles in 2's, 4″-6″ long. Cones: broadly ovate, 2″-3″ long, born on the end of branches in whorls of 3-5, developed more on the outside towards the base, prominent knobs with stout recurved prickles. Seeds: black and winged.

Low hills and flats near the coast.

kʰunum?

Fd. The nuts were eaten fresh and were dried for winter use.

Tech. The roots were used in making fish traps *(haqo·)*. The pitch was used like glue.

G.S. Nuts: Summer
Roots: Fall-Winter

PINE, DIGGER

Pinus Sabiniana. Pine Familyu

A tree, 40′-80′ high, with the main trunk usually divided into two or more secondary trunks, sparse grayish drooping foliage. Bark: dark-gray, roughly and irregularly fissured (broken); branchlets thin with gray bark. Leaves: needles in bundles of three; 7″-13″ long; slender; usually drooping from the ends of the branchlets. Cones: broad, oblong-ovoid shaped; 6″-10″ long; light chocolate-brown colored; each scale prolonged at the tip into sharp and often hooked spurs. Seeds: about ¾″ long with a very hard shell.

Dry slopes and ridges in the foothills and lower mountain slopes of the inner coast Ranges.

cuye q'ále "pinenut tree"

Fd. The nuts were eaten fresh or dried for the Winter. Dried nuts could be eaten whole or pounded into a flour and mixed with pinole. The cone is called *cuye·*.

G.S. Summer

PINE, SUGAR

Pinus Lambertiana. Pine Family

A forest tree 70'-200' tall, with a straight central trunk and horizontally spreading branches arching downward and forming a flat-topped crown. Bark: thin, smooth, grayish at first; becoming thick, deeply and irregularly fissured into long plate-like ridges breaking away into loose purple-brown or reddish scales. Leaves: needles in bundles of five; 2"-3½" long; slender but rigid; dark bluish-green. Cones: oblong and cylinder shaped, 11"-20" long, hang downward on stalks at the ends of the higher branches; scales thin. Seeds: ⅛"-½" long.

Common forest tree at higher elevations, about 2500'-9000'.

cuye q'ále "pinenut tree"

Fd. The nuts inside the cone *(cuye·)* were eaten fresh, or dried for Winter. Stored nuts could be eaten whole or pounded into a flour and mixed with pinole. To remove the cones from the limb they used to lash a deer antler to the end of a straight pole. This was called *šiwili.* The pitch tastes sweet like candy and is called *túy?tu,* now the name for sugar. The pitch was chewed for gum also.

Tech. The pitch was also used in whistles. Pitch can be called *cuye·q'ale qahwe·* "sugar=pine tree pitch" when it is not for food.

Misc. Men climbed the tree to gather pine nuts, but a taboo prohibited the father of a new born baby from climbing the tree for four weeks. If a man broke this taboo, he would be taken away by a spirit in human form. This spirit is named *cuye·tá·š* and stays at *ḳahtó·nan*, a deep pool in the main branch of the Wheatfield Fork of the Gualala River, by the Y camp:

> [A] wife gave birth to a child. Just for kicks, in order to see if it was true or not, he said, "Mother, I'm going after sugar pine nuts." "No," his mother said. "Don't do that; it's dangerous. It is said to be taboo." He set out and started to pick sugar pine nuts. . . . Suddenly he saw a giant standing there. The giant climbed up. He put (the man) down into a net . . . he carried him on and on . . . he set him down by the water at Kahtónan. He dove down with the man and implanted him there. ("The Pinenut Giant Abducts a Man," Oswalt 1964:134-137.)

G.S. Nuts: Summer
Pitch: Spring-Fall

POPPY, CALIFORNIA

Eschscholzia californica. Poppy Family

Freely branched herb with smooth stems 8"-24" long. Leaves: ternately divided into narrow segments ¾"-2½" long, usually with 4 petals, funnel-shaped at the base and flaring out at the top. Seed capsule: elongated, 1"-3" long.

Common in grassy and open places.

ši?dóhc'o? q'ale "milk=disappear plant"

Med. The seed pod is mashed and rubbed on a nursing mother's breast to dry up her milk; or it can be boiled and rubbed on the breasts.

G.S. April-October

PRIMROSE, EVENING

Oenothera Hookeri. Evening Primrose Family

A biennial plant 16″-48″ tall with stout reddish hairy stems that are erect or low. Leaves: bottom leaves are in a rosette, elliptic-oblanceolate shaped with stiff hairs, flat or wrinkled, 4″-9″ long, on petioles 2″-4″ long; leaves along the stem are lanceolate, crowded, 2½″-5″ long. Flowers: in a dense, simple or branched cluster 4″-16″ long; flower 1″-1½″ long, petals pale-yellow, turning orange-red with age.

Moist places along the coastal terrace, in the brush, or in mixed evergreen forest.

ɫosá?bu "elbow=bulb"

Misc. Flowers chewed with gum to make gum yellow.

G.S. June-September

RASPBERRY

Rubus leucodermis. Rose Family

Shrub with stems to 6′ long, arched and branched, and with many straight prickles ⅛″-¼″ long. Leaves: 3-5 foliate, whitish beneath, green above; leaflets ovate to lanceolate, 2″-3½″ long, 1½″-2″ wide, serrated. Flowers: mostly 3-10 flowers in compact clusters; each with 5 pinkish to white petals, ¼″-½″ across, arranged around a flattened yellow disc. Fruit: aggregate berry, reddish to dark-purple, round, ½″.

Slopes and cayons in mixed evergreen forest.

bá·šk^{h}oi̯ q^{h}ale "raspberry plant" (< Pc)*

Fd. The berries *(bá·šk^{h}oi̯)* are picked and eaten fresh from the bush, these weren't stored for the Winter. Nowadays they are canned.

Med. The leaves or root are made into a tea and drunk for treating diarrhea, weak bowels, or upset stomach.

G.S. Berries: Early Summer
Leaves: Spring-Summer
Root: Year-round

* Pc = Central Pomo

REDBUD

Cercis occidentalis. Pea Family

Rounded or spreading shrub or small tree 6′-15′ high with clustered erect stems and smooth red-brown twigs. Leaves: round, smooth and glossy; cordate at base; entire edge 1″-3″ across. Flowers: magenta-pink to reddish-purple growing all along the

stems in short clusters and appearing before the leaves. Seed: pods are many, oblong, flat 1½"-3½" long, ¾"-1" wide, reddish-brown.

Dry slopes and canyons in foothills.

háyhṭa q'ale "red=wood tree" (< Ps)

Tech. The switches are used in baskets. Strips of the bark are used for brown design, or the brown could be peeled to show the white.

Misc. Must be obtained from the Clear Lake (Lake County) area.

G.S. After the leaves drop in the Fall. If the white inner bark is to be used the switches may be gathered into Winter until the new buds form. When gathered at the later time the red outer bark easily peels from the inner bark making the material good for white design but useless for red design.

REDWOOD

Sequoia sempervirens. Pine Family

Evergreen tree 150'-300' tall, straight trunk and horizontal drooping branches. Reproduces by sprouts from the base of old trunks and stumps. Trunk thick at the base reaching diameter of over 20'. Bark: 6"-12" thick, red, spongy-fibrous, with broad ridges. Branchlets: flat sprays of leaves. Leaves: ½"-1" long, sharp pointed, dark-green and shiny above, needles. Female cones: oblong, ¾"-1½" long, red-brown.

Flats and slopes in the coastal fog belt.

q̓asil

Med. The new foliage was warmed in the fire and applied as a poultice for earache. The gummy sap which accumulated

at the bottom of a hollow redwood was also taken as medicine for a rundown condition. It was soaked in water and the liquid was drunk as a tonic (Gifford 1967:11).

Tech. Slabs of the bark *(caší?da)* "house skin") were used to make a house *(?ahca* "house"). They were leaned together in a circle. These slabs were removed from the tree with wedges *(kúnya* < Sp) made of elk horn.

Misc. Pieces of bark are used by young girls to play dolls.

G.S. Foliage: After the first rain in early December.
Bark: Year-round

RHODODENDRON

Rhododendron macrophyllum. Heath Family

Shrub 4'-8' high (in redwood forests it grows to 26'). Leaves: evergreen leaves with entire edges, grow in alternate positions along the branch; oblong to elliptic shaped, 2½"-5½" long; sometimes rusty beneath; crowded on the ends of flower branches. Flowers: several rose-purple colored flowers grow in an umbel on the ends of the branch; each flower tube-shaped with 5 lobes around the edge; 1¼"-2" long. Fruit: hard cylindrical capsule, ½"-1" long.

Along the coast, and in woods along the coast.

bića?

Misc. The flowers are used in dance wreaths for the Strawberry Festival. Flowers from every native plant are gathered at this time to be blessed.

G.S. May (mid Spring)

ROSE, CALIFORNIA WILD

Rosa californica. Rose Family

Erect, branched bush, 3′-9′ tall, stems armed with stout flattened curved prickles. Leaflets: 5-7; oval; ½″-1½″ long, simply or doubly serrate; soft above and short soft hairs beneath. Flowers: in corymbs (flat-topped flower-clusters): each flower 5-petaled ½″-1″ long, roundish, rose-pink. Fruit: oval to round, ⅜″-¾″ long, ½″-¾″ thick, red.

Fairly moist places, canyons, near streams, etc. This rose plant grows more in the open valley areas inland from Kashaya.

badú ʔden ʔ

Fd. The fresh fruit is eaten. It tastes sweetest after the first light frost or cold nights of fall.

G.S. Fruit: Late Summer-Early Fall

ROSE, WOOD

Rosa gymnocarpa. Rose Family

Slender stemmed bush, usually 3′ tall. Stems have slender straight prickles. Leaflets: 5-7; oval to roundish; ½″-1½″ long; doubly serrate. Flowers: usually solitary. Petals: ⅜″-½″ long, roundish, rose-pink. Fruit: oval to round, smooth, ¼″-½″ long, red.

Shaded woods.

badú ʔden ʔ

Fd. The fresh fruit is eaten. It tastes sweetest after the first light frost or cold nights of fall.

G.S. Fruit: Late Summer-Early Fall

RUSH; WIRE RUSH

Juncus balticus. Rush Family

A grass-like plant with round wiry stems and creeping rootstocks; grows in bunches 1′-4′ high. Stems have a straw-colored to brown papery sheath at the base. Flowers: a many-colored panicle with bunches of small purplish-brown and greenish flowers, grow near the top of some stems.

Swamps and wet places.

ci²ba

Tech. Children made play baskets out of the blades. It was also used to string clamshell beads to hold them together when being smoothed.

Misc. Places where this plant grows are avoided by menstruating women because it is associated with water.

G.S. Late Spring-Summer

RYE, WILD

Elymus sp. Grass Family

Perennial grasses with flat blades, and longer stems with a cylindrical spike of seed flowers (spikelets) growing along the sides of the stem near the tip. These stemless spikelets are each 2-6 flowered and bear tiny seeds.

Grassland.

kacáya (< Ru)

Fd. The grain is grounded into a fine powder and used in pinole (see Oat, Wild).

G.S. Summer

SALAL

Gaultheria Shallon. Heath Family

Evergreen herbaceous shrub 16″-80″ high with erect or spreading stems. Leaves: arranged alternately along the stem; thick, ovate to roundish or oblong, 1″-4″ long, finely serrated edge, on petioles 1/16″-1/8″ long. Flowers: in racemes 1″-6″ long at the end of the stems; flower urn-shaped, white or pink, 1/4″-1/2″ long. Fruit: dark-purple, round, 1/4″.

In woods or brushy places in redwood forest and mixed evergreen forest, near the coast.

k̓ošó ʔšo qʰale "salalberry plant"

Fd. The berries *(k̓ošó ʔšo)* are eaten fresh from the vine and are used in pies.

Misc. Pregnant women cannot eat this berry for fear that the baby will come out dark when born. The father is not to eat it either.

G.S. Summer-Fall

SALMONBERRY

Rubus spectabilis. Rose Family

A bush with erect stems 3′-9′ high, with reddish-brown bark and a few thorns. Some stems have many short straight prickles. Leaves: 3-foliate, deciduous; leaflets ovate, doubly serrate, slightly lobed, 1″-3½″ long. Flowers: 1-3 in a cluster, 1″-1¾″ across with red petals. Berry: is ovoid, red or yellow, ½″-¾″ across.

Margins of woods and along streams near the coast.

qʰoṭo qʰále "salmonberry plant"

Fd. The berries *(qʰoṭo)* are eaten fresh.

G.S. Late Spring-Early Summer

SANICLE; SNAKEROOT

Sanicula sp. Carrot Family

Perennial herbs with few leafed stems 4″-20″ long. Leaves: 1″-2″ across, usually basal, palmately or pinnately divided with 3 lobes. Flower: umbels are compound with many greenish-yellow or

purple small flowers. Fruit: is subglobose and densely covered with hooked bristles.

Wooded slopes, open hillsides.

cu²íá² ci²do "paint=flower"

Med. This plant had medicinal use. But at time of the writing no information concerning specific preparation and uses was available.

Misc. Two species which grow in Kashaya territory are *Sanicula arctopoides* and *Sanicula laciniata.*

SEDGE; WHITE ROOT; BASKET GRASS

Carex barbarae. Sedge Family

Grass-like sedge with perennial rootstocks. Stems: 12"-40" long, stout, sharply triangular. Leaf blades: light-green, thick, flat, ⅛"-⅜" wide, with serrulate edges that are sharp enough to cut you. The oval shaped tufts of reddish-brown flowers grow on a spike at the end of the stems. Long roots grow from the grass that are covered with a brown sheath with a white flexible woody center. Other species of *Carex* also have long roots which are good for basketry if growing under the proper conditions. These include: *C. simulata, C. leptopoda, C. globosa, C. brevicaulis, C. salinae-formis, C. Hassei, C. mendocinensis, C. amplifolia, C. Buxbaumii, C. obnupta, C. Lyngbyei.*

Flats in valleys or on slopes that are wet in the spring, and along creeks. In order for the roots to be usable for weaving, the plant must grow in a sandy area free of gravel and dirt. For this purpose the best plants are found growing along creeks and rivers.

qa²díhqʰo² "grass=root"

Tech. The white woody center of the root is used as a sewing element in coiled baskets, and in twining. Some of the baskets made from sedge root are as follows:

A coarsely woven burden basket is called *buhqʰal.* It was used for carrying acorns, seqweed, and other large items. A close woven burden basket called *moʔoʔ* was used for carrying grains. Burden baskets are made in two sizes. One is about 2′ high and others are 3′-4′ high. Three or four small ones were taken along to use while picking, the contents being transferred into the larger basket to carry home.

A cooking basket is called *šeʔeʔ.*

Two kinds of boat-shaped baskets were used. One is coiled and more oblong shaped. The other is twined and more oval with a knob-like reinforcement at one end. Both were used for serving food and were called *baʔšuyʔ* or *haʔiuʔ.*

A work tray is called *šamʔ.* One kind has a fancy, finer weave and is now used for gifts, formerly for gathering and winnowing grain. Another has a coarser weave and is used for gathering, for winnowing acorns, and washing seaweed. A shallower and smaller kind of tray is called *naq̇olo.*

A sifting basket for sifting flower and pinole is called *naʔsu.*

G.S. Fall is the best time, but can be gathered in Summer and early Winter.

SERVICEBERRY, WESTERN

Amelanchier pallida. Rose Family

Deciduous shrub 3′-15′ high with rigid, slender erect or spreading branches. Bark: smooth, red-brown to gray. Leaves:

oval to elliptical or rounded; thick; downy and soft on both surfaces; the underside paler; ¾"-1½" long; ½"-1" wide; pointed or rounded at the tip; 7-9 pairs of visible veins; sometimes toothed below the middle. Flowers: in simple elongated flat-topped or rounded clusters; ¾"-1½" long, with 4-6 flowers; each flower bell-shaped with 5 oval petals ¼"-½" long, white. Fruit: round; purplish-black; ¼".

Dry gravelly and rocky slopes and flats.

bahqom?

Med. The roots were boiled to make a tea to check too-frequent menstruation.

Tech. The stems and foliage were used to thatch inland houses.

G.S. Root: Year-round
Thatch: Spring-Summer

SHOOTING STAR

Dodecatheon Henersonii. Primrose Family

Roots: white with bulblets at flowering time. Leaves: basal; 2"-6" long (including stem); 1"-2" wide; spatulate to elliptic with a blunt or rounded end. Flower: scape 5"-20" high with a 3-17 flowered umbel at the top; individual flower stems (pedicels) ½"-2½" long; flower ¼"-1" long with 5 lobes, magenta to deep lavender or white, flower tube maroon with yellow above. The petals are bent downward and backward. Seed capsule: ½"-1¼" long.

Mostly in shaded places, in oak woodland, brush, and streamside woodlands.

bisisi

Misc. These flowers were hung on baby baskets to make baby sleepy.

G.S. Spring

SILK TASSEL BUSH

Garrya elliptica. Silk-Tassel Family

Stout shrub or small tree growing to 20′ tall, the young twigs having dense short hairs. Leaves: grow opposite each other along the branch; leathery, elliptic to oval shaped, 2½″-6″ long, green above, densely woolly beneath, and with wavy edges. There are separate male and female flower catkins 6″-12″ long. Fruit: round, ¼″-⅜″, white.

Dry slopes and ridges in coastal scrub, chaparral, and mixed evergreen forest.

du·ʔcánʔ qʰale "sticky plant"

Misc. The leaves can be made into a tea to bring on a woman's period when it is late. This medicine is very strong and could cause an abortion if only one or two monthlies are missed. This should only be taken under a doctor's care.

G.S. Year-round

SNOWBERRY

Symphoricarpos rivularis. Honeysuckle Family

Erect branched bush 1′-6′ tall with slender branches, young twigs smooth, older twigs with gray bark. Leaves: oval; ¾″-1¼″ long; ¼″-¾″ wide; dark-green above; paler with scattered hairs beneath; entire. Flower: many, in short stemmed racemes ½″-1″ long; rose-pink to white flowers ¼″-⅜″ long. Fruit: round to ellipsoid, ⅜″-⅝″ diameter, white.

Banks and flats in canyons and near streams in mixed evergreen forest and woodland areas.

bahqom?

SOAPROOT

Chlorogalum pomeridianum. Lily Family

Leaves: 4″-28″ long, ¼″-1″ wide; grass-like and very wavy. Stem: stout; 2′-8′ tall; freely branched above. Flower: pedicels are slender ¼″-1″ long. Flower: petal segments are linear, white with green or purple midvein, ½″-1″ long. Bulb: 2″-6″ long; heavily covered with dark-brown fibers; juice of bulb slimy.

Dry open hills and plains, sometimes in the woods.

ha?am?

Tech. The bulb was used as soap for washing body, hair and utensils. The fibers that cover the bulb were tied into bundles to make scrub brushes and hair brushes *(cuċuqa?* "brush"). The bulb was used for fish poison; it was pounded, placed in a basket and dipped in summer pools

of creeks, rivers, and tidepools, causing the fish to float to the surface.

G.S. Bulb: Spring-Summer

SORREL, REDWOOD

Oxalis oregana. Oxalis or Wood-Sorrel Family

A low perennial herb with creeping roots, the leaf and flower parts growing on their own stems, directly from the base. Stems: red-rusty colored, hairy, 2"-7" long. Leaf: made of 3 leaflets, similar to a clover's leaf; each leaflet ½"-1¼" long, smooth and green above, hairy beneath. Flower: 5-petaled, ¾"-1" long, white or pinkish, often veined with purple.

In rich loamy soil in shaded areas of redwood and Douglas fir forest.

mos' q'ale "sour plant"

Fd. When the plant is flowering the leaves and the stem are chewed for the sour taste. It can be eaten after the sourness is gone when the leaves are large. At the time that the leaves get big the plant is more tangy tasting. Before the flower appears, leaves are too sour.

Med. The whole plant was boiled and the solution was used to wash parts of the body afflicted with rheumatism (Gifford 1967:13).

Misc. There is a game that the children play that involves the sorrel. The children ate as many leaves as they could without making an awful face. The one who could stand the sour taste was the winner.

G.S. February-September

SPICE BUSH; SWEET SHRUB

Calycanthus occidentalis. Calycanthus Family

A bushy shrub 4′-12′ high with erect branches and smooth brown bark. Leaves: grow opposite of each other on the branch. Leaves: ovate to lance-oblong with a tapered tip and rounded base, 1½″-6″ long, ¾″-3″ wide, with very short stems. Flower: single flower grows at the end of the branch; linear petals ¾″-1¼″ long, bright reddish-brown, arranged around a center of short yellow filaments. Fruit: round, woody, cup-like, 1″-1¼″ long.

Moist places in canyons and above ponds. Mostly where there is running water, near redwood trees, oak trees.

šune

Med. The bark of the bush is peeled and dried, although it can be used fresh. The bark is made into a tea which can be mild or strong. This medicine is mainly used for chest colds; it helps you to cough up the phlegm in the chest. It is also used for sore throat and for stomach problems.

G.S. Mid-Late Summer

STRAWBERRY, BEACH; SAND STRAWBERRY

Fragaria chiloensis. Rose Family

A plant with low-lying stems; sends out runners that root at the nodes. Rootstock stout and thick. Leaf: stem is stout, 2″-8″ long, densely silky; leaflets grow in 3's at the end of the stem, shiny above, silky beneath, ¾″-2″ long and broadly obovate shaped. Flowers grow on a hairy stem that is shorter than the leaf stem; flower has 5 roundish petals that are ⅜″-1½″ long, white to pinkish. Fruit: ⅜″-¾″, red, round.

Sand dunes, beaches and cliffs near the ocean.

qʰám ʔsudu

Fd. The berries *(qʰám ʔsudu)* are eaten fresh.

Misc. See Strawberry, Wood.

G.S. Mid-Late Spring, Summer

STRAWBERRY, WOOD

Fragaria californica. Rose Family

Rootstock short, not too thick. Sends out runners that root at the nodes. Leaf: stem is straight, slender, 1½"-6" tall. Terminal leaflets are in 3's, ¾"-2" long, rounded to obovate, coarsely serrate, silky beneath. Few flowers on a slender stem, white to pinkish, 5 roundish petals ¼"-⅜' long. Fruit: red, ⅜"-¾" thick.

Shaded and fairly damp places in mixed evergreen forest and woodland.

qʰám ʔsudu

Fd. The berries *(qʰám ʔsudu)* are eaten fresh.

Misc. The Strawberry (wild) is used in the flower dance at the Strawberry Festival, which is danced by young girls. The wild strawberries can be eaten only after the strawberries are danced and blessed; they are eaten on picnic day.

G.S. Mid-Late Spring, Early Summer

SUNFLOWER, WILD

Wyethia angustifolia. Sunflower Family

A plant with hairy stems 1′-2′ high. Leaves: basal leaves 1′-2′ long, linear-lanceolate, with long petioles; leaves along the stem are smaller, ovate-lanceolate, often with no petiole. Flower head grows at the end of the stem, 1½″-2″ wide; 10-17 daisy-like yellow petals 1¾″-2″ long on the outer edge; numerous disk flowers in the center. Seeds: disk flowers fertilize and grow into a seed ¼″ long with a papery covering.

Common on open plains and low hills.

cʰalam?

Fd. The fresh seeds are eaten and taste like sunflower seeds. They were dried for winter use and ground to mix with pinole (see Oat, Wild).

G.S. June-July (Early Summer)

TARWEED, COAST

Madia sativa. Sunflower Family

Stem erect, simple or branched, 1′-4′ high; herbage strongly scented; hairy; sticky. Leaves: broadly lanceolate to linear 1″-2″ long. Flowers: in panicles with short or no stems; 5-12 petals in a daisy-like disk; white. Black edible seeds.

Close to the coast in fields and waste places. Native of Chile and Argentina.

muhca ḱíli "black grain"

Fd. The seeds were used to make pinole. It was gathered and prepared in much the same way as wild oat. This species of

tarweed was brought to California by the Spanish in the early 1800's and soon dominated over the Native species. For this reason, today the Coast Tarweed is more commonly known in the Kashaya area (see Oat, Wild).

G.S. Late Summer

TARWEED, COMMON MADIA

Madia elegans. Sunflower Family

Plant ¾'-2' tall, hairy, sticky, heavy scented; branched above. Leaves: basal leaves in a small rosette; cauline leaves linear, the lower 3"-5" long, upper very small. Flowers: few to many flowers growing a flat-topped open panicle on long stems; 9-15 flower petals, ¼"-¾" long, yellow, in a daisy-like disk. Black edible seeds.

Dry hillsides and valley flats.

muhca k̇íli "black grain"

Fd. The seeds were used to make pinole. They were gathered and prepared in much the same way as wild oats (see Oat, Wild).

G.S. Late Summer

TEA, LABRADOR (TREE TEA)

Ledum glandulosum Ssp. columbianum. Heath Family

Erect branching shrub 20″-60″ high, with a fragrant odor. Twigs: stiff, yellow-green, covered with minute soft hairs. Leaves: leathery; placed closely along the stem; oblong to ovate-elliptic, 1″-2½″ long; green and wrinkled looking above, yellow-green or whitish beneath; the leaf margin rolled under. Flowers: dense rounded clusters; each flower with 5 white petals, ¼″-⅜″ long, oblong. Seed capsule: oblong ovoid, ¼″ thick, woody, splitting from the base.

Swamps and bogs near the coast by mixed evergreen forest.

naya mihše· q'ale (lit. ? "smell" "plant")

Fd. A beverage tea *(cá·yu)* is made from the leaves.

G.S. Late Summer-Mid Fall

THIMBLEBERRY

Rubus parviflorus. Rose Family

Bush with erect stems 3′-6′ high, bark becoming shreddy. Leaves: deciduous, circular in outline, palmately 5-lobed, unequally serrate, 3″-7″ across, sometimes pubescent. Flowers: 4-7 in terminal corymbs, white, 1″-2″ across, 5 petals. Berry: scarlet ½″-¾″ with a hollowed base.

Common along canyon streams and in open woods in redwood forest.

q̓oṭ'o·lo q'ále

Fd. The berry *(hém?q̓olo)* can be eaten fresh. If you eat too much of the berry your tongue will get little pimples on it.

The leaves *(q̇oṭʰo·lo)* were used to wrap food for baking:

> And as for the liver, they wrapped it in leaves and baked it under the ashes, and when it was cooked they ate it together with acorn mush . . . And the tripe they filled with deer blood, pinned close with small sticks, wrapped in thimbleberry leaves, and then they pinned that together too. They baked it under the ashes. When it was cooked, they took it out and opened it up . . . The blood turns into a dark dark loaf. But the leaves aren't burned, only scorched on top ("Preparing Deer and Other Meat," Oswalt 1964:300-303).

G.S. Leaves: Spring-Early Fall
Berries: Mid Summer

THISTLE, BULL

Cirsium vulgare. Sunflower Family

Coarse biennial 2'-3½' high. Leaves: lanceolate, 1½"-8" long, deeply pinnatifid into pointed lobes with rigid spines and prickles on the vein. Flower: head is large 1½"-2", rose-purple, with lanceolate leaf bracts around it.

A weed common in waste places.

pó·tʰlo hiʔɟiʔ "gonorrhea sticker"

TOBACCO, INDIAN

Nicotiana Bigelovii. Nightshade Family

Annual plant 8″-48″ tall with ascending branches; fuzzy and ill-smelling. Leaves: lower leaves have stems, upper leaves attached directly to stem; ovate-oblong to lanceolate shaped, 2″-8″ long. Flowers: mostly in small racemes; white tinged with green, 1½″-3″ long, ½″-¾″ broad, funnel-shaped. Seed capsule: oval, ½″ long. Seeds: red-brown.

Dry plains and valleys.

ka·wa q'ále "smoke plant"

Misc. The leaves were gathered in summer, dried, and used as tobacco.

G.S. May-October

TOYON

Heteromeles arbutifolia. Rose Family

Evergreen tree-like shrub 6′-30′ high, freely branched with gray bark. Leaves: thick; elliptical to oblong; 2″-4″ long, toothed; dark-green above, lighter beneath; petioles ⅜″-¾″ long. Flowers: many growing in large flat-topped or rounded panicles; small, white, ⅛″ high, 5 rounded petals ⅛″ long. Fruit: ¼″ round, red.

Somewhat dry brushy slopes in canyons and in chaparral and woodland.

budu q'ále "toyon=berry plant"

Fd. The berries *(budu)* were wilted in hot ashes, then winnowed in a basket plate. They were then ready for eating without further cooking. The seeds were expectorated, as

manzanita seeds were. The berries were not stored or eaten raw (Gifford 1967:13).

G.S. October-December

TRILLIUM

Trillium. Lily Family

Stem simple, 8"-10" high from a tuberous rootstock. At the summit of the stem is a whorl of 3 large round-ovate netted veined leaves and a single large flower. The flower has 3 lanceolate green sepals and 3 larger pinkish to whitish or greenish petals. Fruit: a fleshy reddish angled capsule.

Wooded canyons or hill slopes.

silom?

Misc. This plant is said to be poisonous.

VETCH

Vicia. Pea Family

Vine-like plant with pinnate leaves that vary with from 2-12 pairs of leaflets whose shape may range from linear to elliptic depending on the species. There are tendrils along the vine. Flowers that grow out of the leaf axil on racemes having from one to many purple to yellowish or white 5-parted flowers (typical pea

family flower with "wings" and "keel"). Fruit: narrow or elliptic shaped pod depending on the species and from 1″-4″ long bearing round seeds.

Mostly naturalized in waste places. One native species grows in redwood forest, mixed evergreen forest, and coastal scrub.

ʔamaˑla máʔa "rabbit food"

WALNUT, BLACK

Juglans Hindsii. Walnut Family

Lofty one-trunked tree 45′-75′ high. Leaves: alternate, 6″-12″ long, pinnately divided into lance-shaped leaflets with finely serrated edges. Male catkins are 2″-5″ long, brownish, and grow along the branch. Female flowers in small spikes at the end of the branch. Fruit: nut surrounded by a thick, faintly grooved, round shell, 1½″-2″ diameter, which is enclosed in a fleshy husk.

Grows around old Indian campsites.

miʔdíš qʰale "nut tree"

Fd. The sweet nut meat *(miʔdiš* "nut") is eaten fresh or is dried and stored for later use. If it is eaten fresh, the papery peeling should be removed or it will sour your stomach.

Tech. The dark fleshy husk is used in dying bulrush root a black color for making basket design.

G.S. Fall

WILLOW, RED

Salix lasiandra. Willow Family

Tree or shrub growing to 45′ tall with rough brown bark on the trunk, and smooth shiny red twigs. Leaves: lance-shaped, tapering to a short point, dark-green and shining above, whitish beneath, 2″-4″ long, ½″-2″ wide.

Stream banks.

cuɬa·

Med. The leaves were boiled to make a tea and used in treating colds and sore throat.

Tech. Willow branches are used as the warp for twined baskets and for foundation in coiled baskets.

G.S. Leaves: Spring-Summer
Branches: In Fall after the leaves drop.

WILLOW, WHITE

Salix Hindsiana. Willow Family

Erect shrub or small tree 6′-20′ tall with gray bark on older trunks. Young twigs gray, wooly; turning brown and later gray with age. Leaves: linear to lance-linear shaped, tapering to a point at both ends; 1½″-3″ long, ¼″-½″ wide; usually gray and silky, sometimes green and smooth. Catkins: 1″-5″ long on leafy stems; appear after the leaves.

Common along ditches, on sand bars in the creek and river.

cuɬa· (or) *šékʰlay?* (< Ps)

Med. The bark or leaves can be boiled to make a tea for treating sore throat. Tea made from the leaves will cure laryngitis.

Tech. The root is used in twined baskets. The slender and pliable switches are used for twined baskets as well as for the foundation in coiled baskets. For the root to be used for basket material the plant must grow in clean sand that is free of gravel. Larger branches are used as the framework for thatched summer homes, sudatory, and similar construction purposes.

Misc. *cuła·* is also the generic term for all kinds of willow.

G.S. Roots: Summer-Fall
Switches: In Fall when the leaves are dropping.
Branches: Year-round
Leaves: Spring-Summer
Bark: Year-round

WORMWOOD; MUGWORT

Artemisia Douglasiana. Sunflower Family

An aromatic plant with slender erect stems, 1′-6′ tall, and alternate leaves. Leaves: lower leaves ovate in outline, 2″-6″ long, lobed toward the apex and often with toothed edge; upper leaves lance or oblong shaped, entire edge; green above, white and hairy beneath. Flowers: dense spike or panicle at the end of the stem bearing 20-30 tiny greenish flowers.

Stream banks and flats, and low waste places.

qaʔpʰulaʔ

Med. During childbirth the leaves were warmed and placed on the baby's navel after the umbilical cord had been severed with an obsidian knife. It was repeatedly applied for four

days until the remainder of the cord came off (Gifford 1967:15). The leaves are boiled or steeped and the solution drunk to stop excessive menstruation or to ease cramps, and for stomach ache and cramps associated with diarrhea. It is also used for washing itching sores.

Misc. The leaves were dried and rubbed between the hands to make tobacco and rolled as a cigarette for smoking pleasure.

G.S. Mid Spring-Early Fall

YARROW

Achillea borealis Ssp. arenicola. Sunflower Family

Perennial aromatic herb 6"-20" tall, usually branched above and soft or furry. The leaves are many, bipinnate or tripinnate, 4"-6" long and ½"-1¼" wide. The bottom leaves have petioles. The flower heads are many, densely shaggy with 25-30 small white flowers each ⅛" across.

Grassy places along the coast.

šinam ʔké·ṭey ʔ

Med. The juice from mashed leaves is put on sores as a salve.

G.S. Spring-Summer

YERBA BUENA

Satureja Douglasii. Mint Family

Trailing evergreen herb with slender stems 4"-24" long that send out roots. Pleasant odor. Leaves: round-ovate ½"-1" long; on short petioles; rounded teeth on the edge. Flowers: very small, solitary, clustered in leaf axils on stems ⅜"-½" long; flower tubular, white ¼"-⅜" long. Seed: brown shiny nutlet 1/16" long.

Shaded woods in coastal shrub, redwood forest, chaparral, and mixed evergreen forest.

mihšé· q'ale "smell plant"

Fd. The crawling stems and leaves are boiled into a beverage tea.

Med. It is used for a tea to purify the blood, and also was drunk when a person had an upset stomach and was getting thin (Gifford 1967:15). This can also be used for a chest cold. This tea will make you sleepy if you drink a lot.

G.S. Early March-September

YEW

Taxus brevifolia. Yew Family

Tree 15'-75' tall with dark red-brown scaly bark and horizontal drooping branches. Leaves: flat ½"-¾" long, needle-like, deep yellow-green above, forming flat sprays. The wood is heavy, strong and hard.

Scattered in damp, shaded places such as canyons in the forest.

ʔihqʰóʔ qʰale "root tree"
(or)
qʰawáʔni qʰale "digging=stick tree"

Tech. The wood was used to make mush stirrers *(balha)*, digging sticks *(qʰawáʔni)*, and bows *(šihmi)*. The root *(ʔihqʰoʔ)* is used as weft in twined baskets. The root is very strong and especially good for a hopper mortar basket *(ḳolo·)*.

G.S. Wood: Wood for arrows and bows should be cut in fall. Wood for other purposes could be gathered any time.
Root: Fall

Appendix I. Mosses

MOSS, ROCK

We were unable to find the scientific name of this moss. It is the one that grows like a thick green carpet on the rocks.

qʰaʔbe qóci "rock moss"

MOSS, SPANISH

Ramalina Menziesii. Ramalinaceae

A greenish-yellow to pale-green lichen, pendulous on tree branches, becoming expanded and perforated like a net.

Very common on oak trees in open areas.

qʰale qóci "tree moss"

Tech. This was used for baby diapers and other sanitary purposes.

G.S. Year-round

Appendix II. Seaweeds

GRASS, EEL

Zostera marina; Zostera marina var. latifolia. Eelgrass Family

Eelgrass is not a true seaweed. It is more like a land plant but grows in the intertidal zone. The blades are like grass, 1/8"-3/8" wide, 6"-24" long, with a rib up the center; shiny deep green color.

Z. marina grows in sheltered bays and salt marshes.
Z. marina var. latifolia has broader leaves and grows on sheltered sandy bottoms along the open coast.

qʰaśáqa· "water=eel"

KELP, BULL

Nereocystis luetkeama

Stipe 30'-40' lower end solid, upper end hollow. Anchored 30'-50' below the surface of the water. Blades held at surface by air bladders 4"-6" long. Blades: 32-64 forked blades grow from the air bladder continuing into long, smooth, undivided blades 10'-12' long, 3"-5' wide, brown.

Found all over beach after storms.

cʰanama

Fd. The thick part of the stalk is cooked in an oven or in hot ashes until it becomes puffy. The stalks also can be cut into lengthwise strips and dried for winter use.

Med. The stalk is split into ½" wide and 2"-5" long strips and dried. A layer of salt crystals form on the surface. These salty strips of kelp can be sucked on if you have a cold to soothe the throat and clear mucus.

Tech. The stem is shredded into long slender pieces and partially dried in the sun until they are limp. These can be then be used as cordage or fish line.

G.S. Summer-Fall

(No common name.)

Porphyra perforata

A membranous algae with a ruffled flat blade and no stem. Deep purplish color. Blade 18"-20" long and wide.

At rocks at higher levels. Most common between 3.5'-2' tide levels. Seasonal and best developed from Late Winter through Summer.

ʔoṭ'ono

Fd. This seaweed can be eaten fresh by baking it or it can be dried for later use. It is dried in the shape of cakes about a foot in diameter and ½" thick by laying it out in flat piles to dry in the sun. Dried seaweed can be baked in the oven or fried and eaten with tortillas, fry-bread or bread. This is the most abundant seaweed and is gathered in large quantities for storage.

G.S. Late Winter-Summer

(No common name.)

Porphyra lanceolata

A membranous algae with a ruffled flat blade 6"-12" wide, 18"-20" long, no stem. Deep purplish color. Satiny sheen retained when dry.

mutám ʔtʰono "shiny=seaweed"

Fd. This seaweed is prepared the same as *ʔoṭʰono*. The plant is similar except that it has narrow leaves and is shiny when dry. It is delicate and has the best flavor.

G.S. Early Summer

SEA PALM

Postelsia palmaeformis

Formed like a palm tree, to 2' tall with tough thick rubbery stripe with a terminal cluster of slender drooping blades 8"-12" long and 1"-2" wide. Olive brown glossy stipe 1"-2" diameter. In February is new growth. Mature in spring and summer.

Ranges from Vancouver Island to central California. Upper tidal level in outer rocky areas.

qaye

Fd. The fresh stem can be chewed raw or baked in an oven or hot ashes. It is also dried for winter use by cutting the stem into long strips and laying them in the sun or in a warm place in the house.

G.S. Summer-Fall

ULVA; SEA LETTUCE

Ulva lactuca Linnacus

Grass-green with texture of lettuce. Thin broadly expanded blade 8″-12″ wide. Surface perfectly smooth although margin often deeply cut. A number of blades arise from holdfast (place of attachment to tock). Holdfast perennial; blade annual.

Found on Pacific coast from Alaska to lower California attached to rocks or other seaweed from 2′ tide mark to mean low tide mark.

ɨihtaɬˑóno "bird=seaweed"

Fd. A light-green peppery seaweed used as flavoring with other seaweeds.

G.S. Summer

Appendix III. Mushrooms

AMANITA

Amanita muscaria. Gill Fungi

The fruiting body has a cap and a stalk. Cap: 2½"-6½" across, hemispherical-shaped and becoming expanded when older, colored yellow to orange or blood-red; dotted with white patches that are the remains of a white veil that covered it when young. Stalk: white, with a ring hanging around it; has a bowl-like bulb at the base. Gills: crowded, white; flesh is yellowish beneath the cap.

Under pine, fir, or birch on poor soils.

ma·ṭí·hoċe· "poison=oak=mushroom"

Misc. Poisonous

CHANTARELLE

Cantharellus cibarius. Chantarelles

Funnel-shaped mushroom with cap and stalk. Cap: 1"-4" across, depressed toward the center, with a wavy margin. Stalk is about 2" long and ¾" wide, smooth. Gills are forked and shallow with blunt edges. The color is apricot-yellow.

Grows under pine trees (confiers).

q'ale másinċe· ("tree" ? ="mushroom")

Fd. These were baked on hot stones. Nowadays it is fried with onions.

G.S. Late Fall and Winter after the rains.

MUSHROOM, CORAL

Hericium coralloides. Tooth Fungi; Hedgehog Mushrooms

Densely branched from a thick trunk with teeth that hang down in clusters like tassels. Grows up to 14" across. Teeth are ¼"-½" long. Color: white, turning dull yellowish with age.

Dead trunks of fir and leafy trees, especially trees of the Beech Family.

šayiće "scrub=jay=mushroom"

Fd. These were baked on hot rocks. Today it can be baked in the oven or fried.

G.S. In Fall after the rains.

MUSHROOM, DEER; WOOD MUSHROOM

Agaricus silvicola. Gill Fungi

The fruiting body has a cap and stalk. Cap: 2½"-5" across, smooth, white; bruises and ageing cause yellowing. Stalk: white, smooth, membranous ring around middle, flattened base. Gills: grayish-white tinged with flesh color or pale pink. Smells sweet like anise seed.

On the ground in the woods.

bihšeće "deer=mushroom"

Fd. These were cooked on a flat hot rock. Only the tops were eaten, the stems were thrown away. They were gathered in great quantity. The general term for any mushroom is *hiće*.

G.S. After the rains around November.

MUSHROOM, FIELD

Agaricus campestris. Agaricales (Gill Fungi)

The fruiting body has a cap and stalk. The cap is white, dry, 1½"-3" across. The stalk is short, tapers below the ground surface, and has a narrow ring which soon falls off. Gills are deep pink at first, becoming dark-chocolate when older.

Pastures and meadows.

pʰalá?cay hiċe "white=man mushroom"

Fd. These were baked on hot rocks. Today they are baked in the oven or fried.

G.S. In Fall after the rains.

MUSHROOM, HEDGEHOG

Dentinum repandum. Hedgehog or Tooth Fungi

The fruiting body has a cap and stalk. The cap is large, 3"-12" across, and usually rather irregular in shape. On the underside of the cap are many needle-like teeth which hang down. The color of the cap is white. The flesh is white and rather brittle. The stalk and teeth slowly stain yellow when bruised.

Occurs in the rich soil and leaf mulch under pine forests and deciduous forests.

ċalal

Fd. These were baked on hot stones. Today it is baked in the oven or fried.

G.S. In Fall after the rains.

MUSHROOM, ORANGE PEEL

Peziza aurantia. Cup Fungi

Stemless cup ½"-5" across, with an irregular shape that is often split. Scarlet orange inside, whitish and downy outside, looks very much like a piece of orange peel.

Bare gravels, paths, lawns, and bare soil in woods.

duwiće "coyote=mushroom"

Fd. This mushroom was cooked on hot stones or on coals. It can be eaten fresh too.

G.S. Fall

MUSHROOM, OYSTER; TREE MUSHROOM

Pleurotus ostreatus. Gill Fungi

The cap may be attached directly to the wood it is living on or it may be attached off-center to a short stalk, which is attached to the wood. Cap: 1"-6" across, shell-shaped, smooth or slightly cracked, white to gray or tan with a waxy lustre. Gills are white and extend down the stalk. Flesh is soft, firm, and white.

Found on dead wood from leaf-bearing trees, especially of the beech family; sometimes found on conifer wood.

šici

Fd. This was cooked on hot stones and was said to taste like meat. Today it is baked in the oven or fried.

G.S. Spring and Fall after rains.

MUSHROOM, TIMBER; ITALIAN MUSHROOM

Boletus edulis. Pore Fungi

Fruiting body has a cap and stalk. The cap is brownish on top, smooth, slightly sticky when fresh, 2½"-8" across, round. The underside is dotted with holes like a sponge. Flesh is white and firm. Stalk is pale brown and thick.

Found in conifer and deciduous woods where there is rich leaf mulch, especially under trees of the Beech Family.

ċepóhkol "mushroom=hole=on=the=bottom"

Fd. Cooked on hot stones and eaten. Today they are baked in the oven or fried.

G.S. After first good rains in Fall.

PUFFBALL

Lycoperdon. Puffballs

Round or pear-shaped body attached to the ground by slender stringy roots growing at the base. The body is fleshy when young, but when mature the center becomes spongy and filled with powdery olive-yellow spores. Different species vary from 1"-12" across. The color is usually white and may get rusty if exposed long to sunlight.

Some grow on rotting wood, others in grass.

ʔama ġála·ša hiċe· "earth moon mushroom"

Misc. These are considered to be poisonous.

Appendix IV. Introduced Plants

Apple	*ya·pálka* (<Ru *jabloka*)
Beans	*yihó·l* (<Sp *fríjol*)
Beets	*sama ḱis* "stem red"
Cabbage	*kó·les* (<Sp *col*)
Cantelope	*meló·n* (<Sp *melón*)
Carrot	*cʰa²bu*
Corn	*ma·yiš* (<Sp *maíz*)
Fig tree	*qalam² qʰale* (see Maple)
Fig	*qalam²*
Fuchsia	*šimamó ciya² ci²dom²* "ear-hole" "crawl out" "flower"
Grapes	*²ú·was* (<Sp *uvas*)
Grass, lawn	*qu²di šáqʰa·la* "grass green"
Lettuce	*pʰalá²cay² ²ohso* "white=man clover"
Potato	*hi²bu* (see *Brodiaea;* Ithuriel's Spear)
Prune	*haɨ* (see Pepperwood)
Pumpkin	*kaliwá·sa* (<Sp *calabaza*)
Radish	*sama ḱis qawiyya* "stem red little=ones"
Squash	*kaliwá·sa* (<Sp *calabaza*)
Turnip	*²alí·tʰka*
Watercress	*cʰayniman ²ohso* "chinaman clover" (<Eng)
Watermelon	*santí·ya* (<Sp *sandía*)

Appendix V. Parts of Plants

Acorn	*biʔdu*
Bark	*qahwa·*
Berries from stickery plants	*ɬíʔbahqay*
Branch or limb of tree	*qʰale ʔíša·*
Buckeye nut	*bahša*
Flower	*ciʔdo, ciʔdomʔ*
Food blossom	*maʔa ciʔdo*
Fuzz; fine stickers	*ʔihsis*
Grain	*muhca*
Leaf	*šihpʰa*
Leaf, dead	*siʔɬal*
Nut, edible	*miʔdiš*
Peppernut	*behe*
Peppernut fruit	*haɬ*
Fleshy part that is eaten	*qalamʔ*
Pine cone	*cuye·*
Pine nut	*cuye·*
Root	*ʔihqʰoʔ*
Sap; pitch	*qahwe·*
Seed	*semí·ya*
Stem; trunk	*sama*
Sticker, thorn	*hiʔɬiʔ*
Wood	*ʔahay*
Wood, dead; dry brush	*háyhcʰa*
Young stalk or shoot	*wihlamʔ*

Appendix VI. Glossary

aggregate (as in aggregate fruit): collected into dense clusters, e.g., blackberry, a fruit formed by the clustering together of ovaries (cf. *ovary*).

alternate (as in alternate leaves): an arrangement of parts along a central stem where only one leaf or branch grows from each node; not opposite or whorled (cf. *opposite; whorl*). See Fig. 5.

annual: a plant flowering and fruiting in the first year or season and then dying. See Fig. 1.

apex: the tip, point, or summit. See Fig. 8.

aromatic: containing aroma; fragrant; spicy-smelling.

axil: the upper angle formed by a leaf or branch with the stem. See Fig. 5.

axillary (as in axillary flower): occuring in an axil. See Fig. 5.

banner: the upper petal in a pea flower (cf. *keel*).

basal (as in basal leaf): relating to, or situated at, the base. See Fig. 5.

bi-: two; twice (<Latin).

biennial: living for two years, from sprouting (first year) to maturity and death (second year).

bipinnate: (cf. *pinnate*).

biternate: (cf. *ternate*).

blade: the flat expanded portion of a leaf or petal.

bract: a modified or reduced leaf growing at the base of a flower or flower cluster.

branchlet: a secondary branch.

bulb: an underground leaf bud consisting of a short thick stem and with thickened overlapping scales as in the onion or lily, sending out roots from below. See Fig. 2.

burr: a rough or prickly covering around a fruit.

burl: an abnormal growth on the trunks of some trees such as redwoods, and from which new sprouts of leaves and branches often grow, eventually forming new trees. See Fig. 3.

cap: the umbrella-like expansion on the top of a mushroom stalk; on the underside it contains gills or teeth or pores.

catkin: a spikelike flower cluster in which the flowers (which are

scaly) have no petals but grow in close circular rows on a slender spike. See Fig. 4.

cauline (as in cauline leaf): pertaining to or growing on the stem. See Fig. 5.

cleft (as in cleft leaf): with sharp lobes cut to about the middle of the leaf or petal. See Fig. 9.

cluster: growing together in a bunch.

compound: having like parts united into a common whole, e.g., a compound leaf has two or more separate leaflets. See Fig. 6, 10.

cone: in trees of the pine family, a mass of pollen-bearing scales; also a cone-like part bearing spores, as in horsetail plants.

congested (as in congested flower head): gathered together in a mass.

conical: cone-shaped, with the point of attachment at the broad base.

convex (as in convex flower umbel): curved or rounded on the surface, like the exterior of a circle. See Fig. 10.

cordate: heart-shaped with the notch at the base. See Fig. 7.

corm: a short, bulb-like underground stem; e.g., the "bulb" of gladiolus. See Fig. 2.

corymb: a simple flower cluster that is flat-topped or convex, with the lower or outer flower stems longer. The lower or outer flowers in a corymb open first. See Fig. 10.

crown: the top of a tree; also the non-dying base of a herbaceous perennial, i.e., root crown.

culm: the hollow or pithy slender stem found in grasses or sedges.

cylindrical: relating to or shaped like a cylinder.

cyme: a flat-topped or convex compound flower cluster in which the central flowers open first (cf. *corymb*). See Fig. 10.

deciduous: falling off. Deciduous trees shed their leaves in autumn.

dense: having its parts massed or crowded together; compact.

disk: the central portion of a flower head of the sunflower family; a disk is composed of tubular flowers.

downy: closely covered with very short and weak soft hairs.

ellipsoid: a solid object in the form of a circle that is more than twice as long as it is broad.

elliptic: shaped in the form of a flattened circle that is more than twice as long as it is broad. See Fig. 7.

elliptic-oblanceolate: a plant may have both elliptic and/or ovate shaped leaves, and/or leaves shaped like a combination of these two leaf shapes (cf. *elliptic* and *ovate*).

entire: the margin (leaf edge) not touched or serrated; smooth entire edge. See Fig. 9.

erect: upright; not leaning or lying down.

evergreen: remaining green through the winter; not shedding leaves.

foliage: collectively, the mass of leaves, flowers, and branches of a plant.

foliate: leafy; referring to the leaves.

frong: the leaf of a fern.

gills: the blade-like circularly arranged plates of tissue on the underside of a mushroom cap.

gland: a depression or bulge on the surface of a plant part which secretes a sticky fluid.

globular: nearly round.

head: a dense roundish cluster of stemless flowers attached at the same point on the main flower stem.

hemisperical: shaped like a half-circle.

herbaceous: a plant without woody stems.

herbage: collectively, the green parts of a plant.

inflorescence: the flower cluster of a plant.

keel: a long central ridge on the back of an organ (e.g. some kinds of seed pods have a keel); the two lower petals of a pea flower.

lance-linear: a plant may have both lanceolate and/or linear shaped leaves, and/or leaves shaped like a combination of these two leaf shapes (cf. *lanceolate* and *linear*).

lanceolate: lance-shaped; much longer than broad, tapering to a point from below the middle to the tip. See Fig. 7.

lance-ovate: a plant may have both lanceolate and/or ovate shaped leaves, and/or leaves shaped like a combination of these two leaf shapes (cf. *lanceolate* and *ovate*).

lateral (as in lateral branch): at or on the side.

leaflet: one of the divisions of a compound leaf; leaflets do not have a bud at the base of the petiole. See Fig. 6.

linear: long and narrow with parallel sides, as the leaf blade of grasses. See Fig. 7.

linear-lanceolate: a plant may have both linear and/or lanceolate shaped leaves, and/or leaves shaped like a combination of these two leaf shapes (cf. *linear* and *lanceolate*).

linear-oblong: a plant may have both linear and/or oblong shaped leaves, and/or leaves shaped like a combination of these two leaf shapes (cf. *linear* and *oblong*).

lobe: a rounded division or segment of an organ (e.g. a leaf) cut less than halfway to the middle. See Fig. 9.

lustrous: shining.

margin: edge.

membranous: resembling a thin, soft, pliable sheet or layer.

nectariferous (as a nectariferous flower): bearing nectar, a sweet liquid secreted by certain glands of a plant.

node: the joint of a stem; the place on a stem where a leaf grows. See Fig. 5.

ob-: the reverse of (< Latin).

oblanceolate: lance-shaped with the tapered point towards the base instead of toward the tip. See Fig. 7.

oblong: describing a shape that is much longer than it is broad, with nearly parallel sides. See Fig. 7.

oblong-elliptic: a plant may have both oblong and/or elliptic shaped leaves, and/or leaves shaped like a combination of these two leaf shapes (cf. *oblong* and *elliptic*).

oblong-ovate: a plant have both oblong and/or ovate shaped leaves, and/or leaves shaped like a combination of these two leaf shapes (cf. *oblong* and *ovate*).

oblong-ovoid: a solid object with a basic oblong-ovate shape (cf. *oblong-ovate*).

obovate: shaped like the outline ofa hen's egg with the broader end toward the tip. See Fig. 7.

obovoid: a solid object shaped like a hen's egg with the broader end toward the tip.

opposite (as in opposite leaves): situated in pairs on an axis e.g. opposite leaves or branches grow two from each node; proceeding from opposite sides of the stem. See Fig. 5.

oval: a broad elliptic shape (round but longer than it is broad)

slightly contracted toward the tip like a hen's egg (cf. *ovate*). See Fig. 7.

ovary: an enlarged portion of the female flower part that contains the fertilized seeds, as a fruit.

ovate: shaped like the outline of a hen's egg with the broader end downward at the base of attachment. See Fig. 7.

ovoid-elliptic: a solid object with a basic ovate-elliptic shape (cf. *ovate-elliptic*).

ovate-elliptic: a plant may have both ovate and/or elliptic shaped leaves, and/or leaves shaped like a combination of these two leaf shapes (cf. *ovate* and *elliptic*).

ovate-lanceolate: a plant may have both ovate and/or lanceolate shaped leaves, and/or leaves shaped like a combination of these two leaf shapes (cf. *ovate* and *lanceolate*).

palmate: shaped like a hand with the fingers spread; having veins, lobes, or leaflets radiating from a common cluster. See Fig. 9.

panicle: a compound flower cluster in which the flower stems are compounded by branching. A raceme (cf. *raceme*) can be a panicle if its stems (pedicels) are branched. See Fig. 10.

parasitic: a plant that lives on or in another living organism from which it obtains food, shelter, etc.

pedicel: the stem of a single flower in a flower cluster. See Fig. 10.

peduncle: the stalk or stem of a flower or flower cluster. See Fig. 10.

pendulous: suspended or hanging.

perennial: continuing to live from year to year.

petal: one of the colored "leaves" of a corolla (flower).

petiole: a leaf stalk (stem). See Fig. 6.

pinnate: a compound leaf with the leaflets arranged along each side of a common petiole. See Fig. 6, 9.

bipinnate: twice pinnate; a compound leaf arrangement in which the pinnately arranged leaflets occur on secondary branchlets.

tripinnate: three times pinnate; a compound leaf arrangement in which the pinnately arranged leaflets occur on tertiary branchlets.

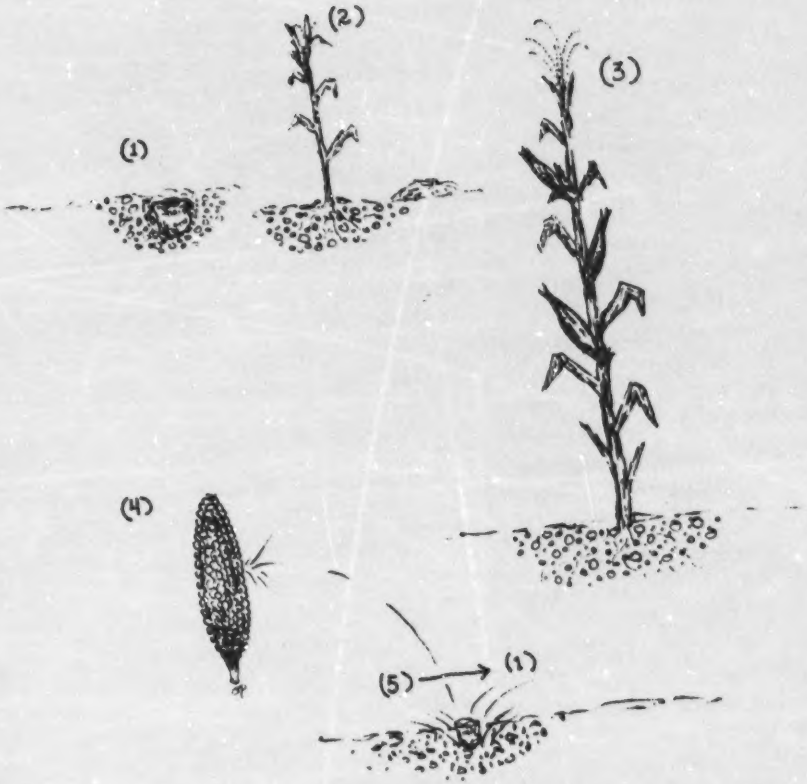
pinnately-trifoliate: a pinnate arrangement of three leaves.

pith: the loose spongy tissue in the center of a stem.

pubescent: covered with short soft hairs.
pyramidal: having the shape of a pyramid or triangle.
raceme: a simple flower cluster in which the single flowers grow individually on small stems (pedicels) of nearly equal length, arranged at intervals along a single larger stem. See Fig. 10.
ray: a primary branch of an umbel (cf. *umbel*), or, the petalled flowers arranged around the outside of the disk flowers in members of the sunflower family.
resinous: containing resin, a yellowish-to-dark-brown substance exuded from various plants and trees.
rhizome: an underground stem or rootstock with scales at the nodes, and producing leafy shoots on the upper side that grow into new plants, and producing roots on the lower side.
rootstock: a root-like stem that grows underground or along the surface of the ground sending up leafy shoots and bearing roots on the underside (cf. *rhizome*)
rosette: a circular cluster of leaves or petals.
rush-like: like a rush (a grass-like plant with round hollow or pithy stems, growing usually in wet or marshy places).
scale: any thin, membranous, papery or woody bract.
sepal: the leaf-like part of a flower at the base of the petals.
serrated (as in serrated leaf): a saw-toothed edge, with the teeth pointing forward toward the tip. See Fig. 9.
sheath: where the base of the leaf blade completely encloses or sheaths the stem, as in grasses and sedges.
simple: unbranched, e.g., a simple leaf or flower is composed of one leaf per stem or single flowers growing on unbranched pedicels. See Fig. 6.
solitary (as in solitary flower): borne singly, occurring alone.
spatulate: shaped with a rounded tip and contracted below to a narrow or slender base. See Fig. 7.
spike: a simple flower cluster in which the stemless flowers (no pedicels) are densely arranged along an elongated common peduncle (central stem or stalk). See Fig. 10.
spikelet: a secondary spike; the flower cluster in grasses.
spore: the reproductive body of some types of plants (e.g. horsetail, ferns, etc.), analogous to the seed of other types of plants (e.g. grasses).
spur: a slender hollow extension of a flower petal.

stalk: the stem or main axis of a plant or mushroom.
stipe: the stem or main axis of a seaweed.
stout: firm, solid.
sub-: somewhat, almost, or beneath (<Latin).
succulent: juicy; fleshy and soft.
tendril: a slender, leafless, coiling or twining organ by which a climbing plant grasps for support.
terminal: growing at the end of a branch or stem.
ternate: occuring or divided into threes, as a leaf consisting of three leaflets. See Fig. 6.
biternate: twice ternate; a compound leaf-arrangement in which the ternately arranged leaflets occur on secondary branchlets.
ternate-pinnate: groups of three leaflets or leaf parts arranged pinnately.
tooth: any small sharp pointed lobe on the edge of, e.g., a leaf or petal.
tri-: three (< Greek or Latin).
triangular: having a three-sided shape. See Fig. 7.
triangular-oblanceolate: a plant may have both triangular and/or oblancelolate shaped leaves, and/or leaves shaped like a combination of these two leaf shapes (cf. *triangular* and *oblanceolate*).
triangular-obovate: a plant may have both triangular and/or obovate shaped leaves, and/or leaves shaped like a combination of these two leaf shapes (cf. *triangular* and *obovate*).
tripinnate: (cf. *pinnate*).
tuber: a thickened, solid, and short underground stem or root with many buds. See Fig. 2.
umbel: a cluster of flowers with stalks of nearly equal length which are attached at the same point on the stem, like the ribs of an umbrella. See Fig. 10.
urn-shaped: shaped like a vase, usually rounded and longer than it is wide.
whorl: an arrangement of similar parts (as leaves, flowers, or inflorescence) in a circle around a node. See Fig. 5.
wing: a thin and usually dry extension bordering a part.

Fig. 1



Annual: Completing the life cycle in one growing season

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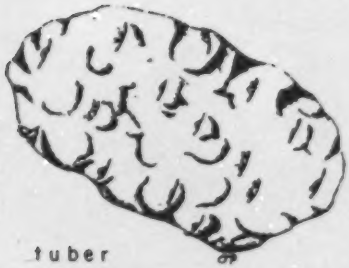
Fig. 2

corm



tuber

bulb

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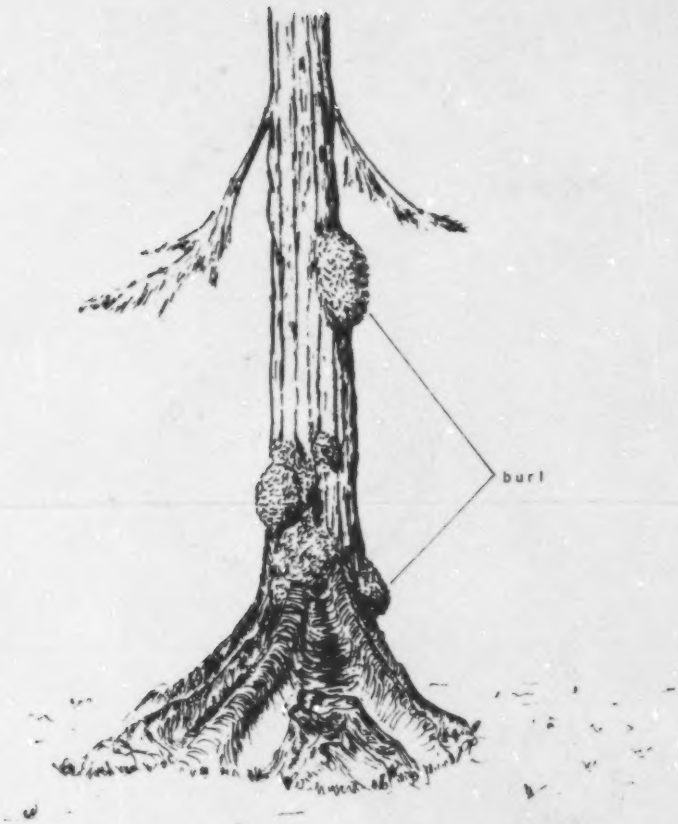

Fig 3 Burls on a redwood tree

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Fig. 4

catkin

acorn

Tan Oak
Lithocarpus densiflora

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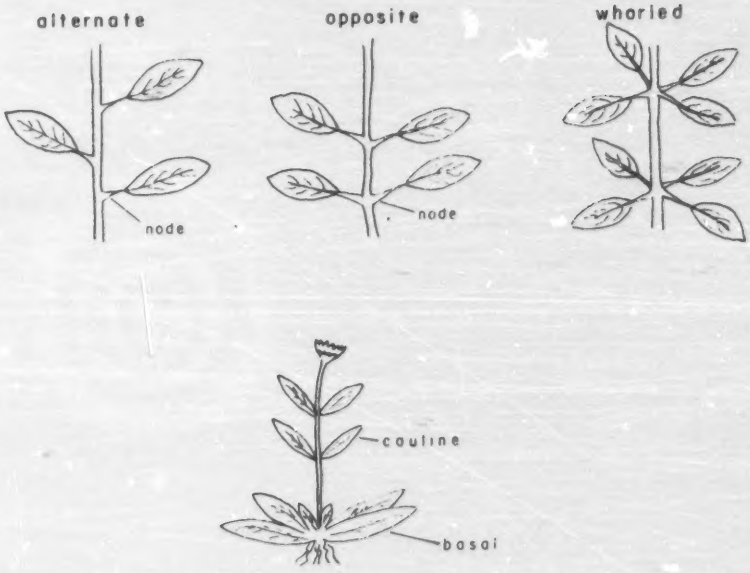
Fig.5 Arrangement on the Stem



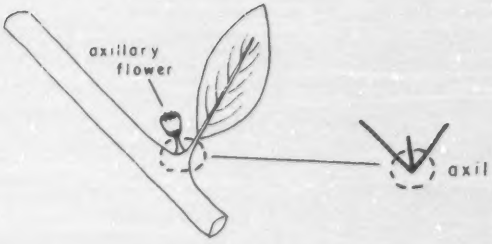


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Fig. 6

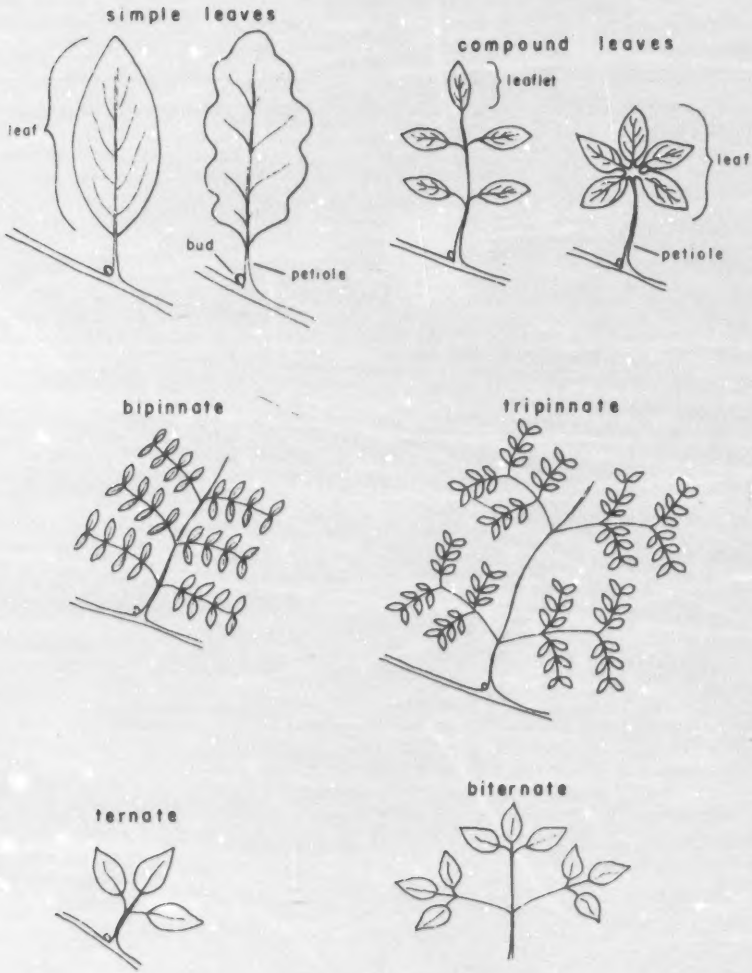

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Fig. 7 Leaf Shape

This is the general outline of the leaf. When the leaf is lobed the general outline disregards the lobes.

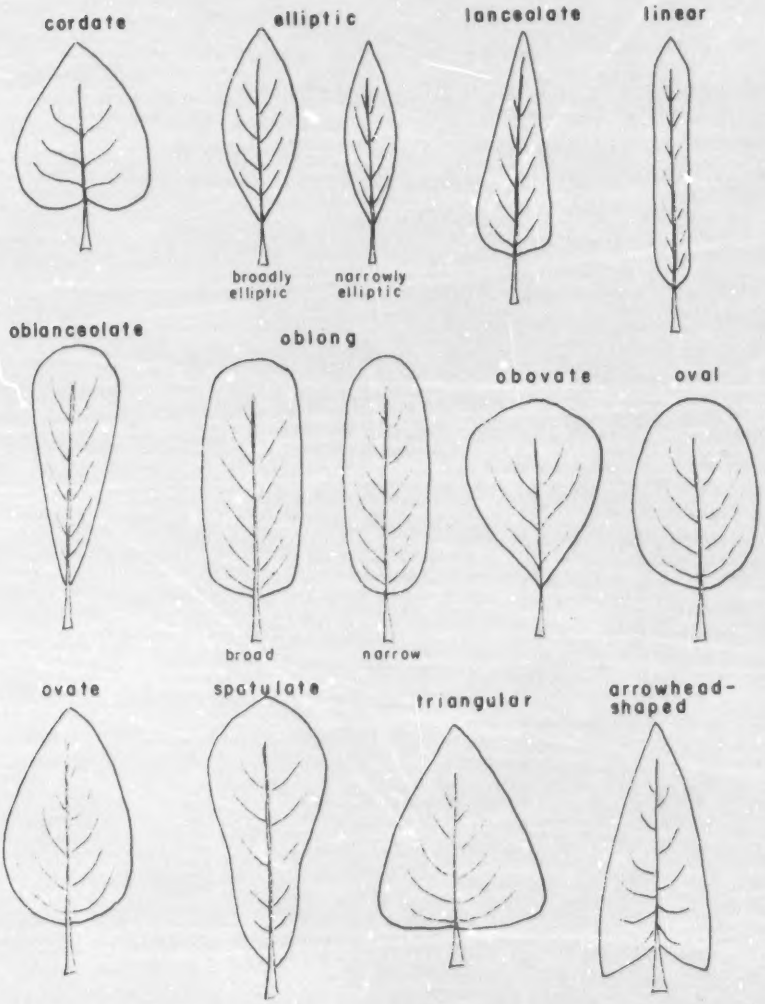

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Fig. 8

Leaf Tip (apex)

acute, pointed, or tapered

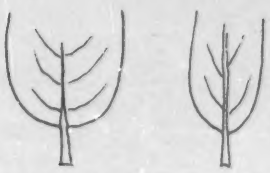
broad medium narrow

obtuse rounded truncate or blunt

Leaf Base

cordate or heart-shaped

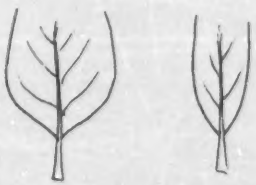
rounded



broad narrow

squared-off

wedge-shaped, acute, or tapered



broad narrow

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Fig. 9 Leaf Margins

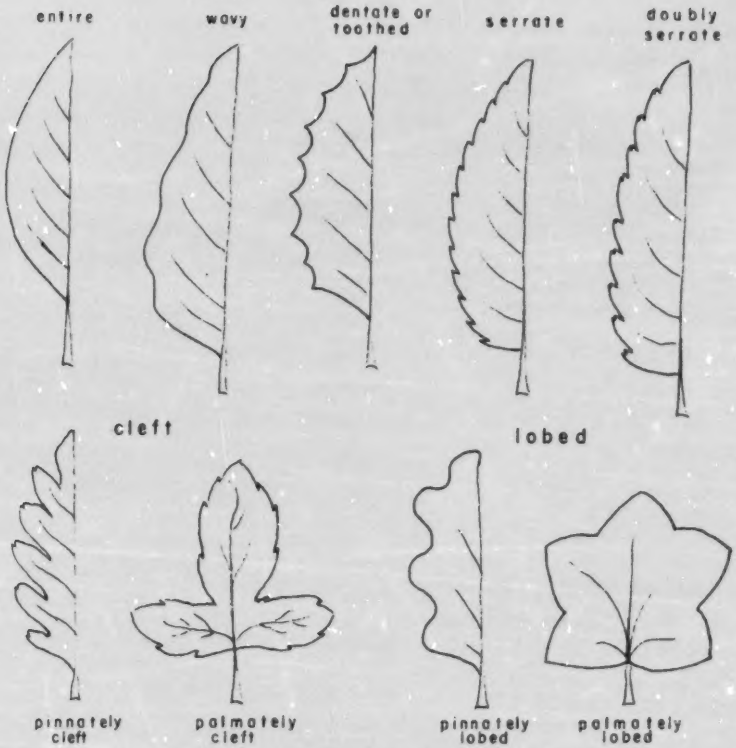

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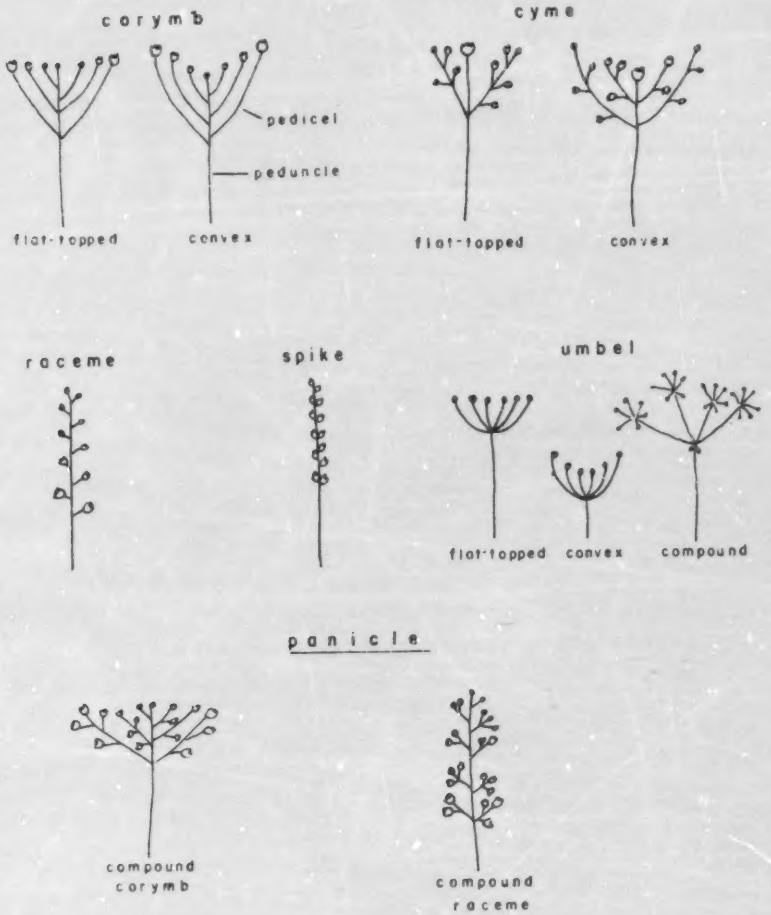
Fig 10 Kinds of Flower Clusters



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Appendix VII.
Key to Kashaya Pronunciation

Kashaya words are written in a way that relates directly to the pronunciation of the words as they are spoken in isolation. The Kashaya alphabet was created according to the principle that each significant sound must be identified with one and only one letter; for instance, the English k-sound may be represented in writing as c (cat), ck (ba*ck*), qu (li*qu*or) or k (*k*eep), but the Kashaya k-sound is always written as k (cf. Oswalt 1961, 1964, 1975). Many of the letters of the Kashaya alphabet are familiar to English speakers; however, some Kashaya letters either are not used in English spelling or represent sounds in the Kashaya language that are different from English sounds. The correct pronunciation of each letter is illustrated below by a Kashaya word. When there is a similar sound in English, an English example is also given. If there is no similar English sound, a description of the Kashaya sound is given.

Since Kashaya has many more distinct consonants than English has, it is necessary to add certain marks to letters of the English alphabet to create new Kashaya letters; for example, such combinations as *ṭ*, *c*ʰ and *ṗ* represent single consonant sounds that are significantly different in pronunciation from t, c and p. In the case of a sound such as *ṗ*, the ' indicates that the consonant is pronounced with an accompanying "clicking", "popping" or "sharp" sound.

All Kashaya vowels can either be said quickly (that is, are "short") or slowly (are "long"), and this makes a difference in meaning in the Kashaya language. Long vowels are written with a raised dot immediately following. Consider the Kashaya words *ʔihya·* "bone" and *ʔihya* "wind". Note that these two words are written and pronounced the same but with the important exception that the last vowel in *ʔihya·* "bone" is long as is indicated by the raised dot. Such vowels are sounded approximately twice as long as short vowels.

The acute accent mark (ˊ) occurs over a vowel in a syllable and indicates that the syllable is pronounced more loudly and with a higher pitch than other syllables in the word.

Kashaya letter	*Kashaya example*	*English example*	*Description of Kashaya sound*
a	*ha?a* "horn"	father	
a·	*há·ro* "tincup"		
b	*bi?du* "acorn"	*b*it	
c	*cuma?* "gray squirrel"	*j* as in "this *j*ob" (when said rapidly)	
c^h	$c^ha?bu$ "carrot"	*ch*urch	
ċ	*ċám?ċaṭa* "red-winged blackbird"		c (as in *cuma?*) with accompanying popping sound
d	*duwi* "coyote"	*d*ud	
e	*cehey* "bumblebee"	b*ai*t (approximate example)	
e·	nup^he· "skunk"		
f	*stú·fa* "stove"	*f*oot	
h	*hóhwa* "door"	*h*ope	
i	*šihmi* "bow" (as in bow and arrow)	*b*eat (approximate example)	
i·	*kayi̇na* "chicken"		
k	*kawa·yu* "horse"	s*c*ald	
k^h	k^homhca "eight"	*c*old	
k̇	*k̇ihša* "seagull"		k (as in *kawa·yu)* with accompanying popping sound)
l	*libu*· "ceremonial whistle"	*l*ip	
m	*ma?ca* "roundhouse"	*m*all	
n	*nuhwa?* "fawn"	*n*oon	
o	*no?q̇o* "mussel"	n*o* (approximate example)	

o·	*hiċo·* "egg"		
p	*pili·li* "wheel"	*s*peak	
pʰ	*pʰi?k̇o* "ball"	*p*eek	
ṗ	*ṗa?la·* "tree slug"		p (as in *pili·li*)with accompanying popping sound
q	*qahca* "flint knife"		like English k-sound but made further back in mouth
qʰ	*qʰám?ṡudu* "strawberry"		q (as in *qahca*) with an accompanying puff of air
q̇	*q̇ala·ša* "moon"		q (as in *qahca*) with an accompanying popping sound
r	*wú·ru* "burro"	*r*ude	
s	*sibo* "three"	*s*ee	
ṡ	*ṡayi* "scrub jay"		like English ts-sound (in ca*ts*) with accompanying popping sound, or s (as in *sibo*) with accompanying popping sound
š	*šima* "ear"	*sh*eet	
t	*tule* "humming-bird"		*
tʰ	*mutʰu·nu* "Western fence lizard"		t (as in *tule*) with accompanying puff of air **

* blade of tongue is pressed against area between teeth and ridge between teeth.

** for younger speakers—pronounced like English *th*-sound in thin.

ƚ	*haƚ* "prune"		t (as in *tule*) with accompanying popping sound
ţ	*ţuhšo* "five"	*st*one	
ţʰ	*ţʰo?ó·koy?* "cricket"	*t*one	
ƛ	*hi?ƛi?* "thorn"		ţ (as in ţuhšo) with accompanying popping sound
u	*kuhnu* "clamshell bead"	*sou*p (approximate example)	
u·	*hišu·* "arrow"		
w	*waţa?* "frog"	*w*all, tow*n*	
y	*ya·su* "needle"	*y*awn, bo*y*	
?	*?ama·la* "jackrabbit"	uh-uh (informal way of saying "No")	

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